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FA-36
October 1980

Teaching Fire Safety Through Exhibits

Fire in the News
SNOWSTORMS create special fire hazards.
Roads are impassable to fire trucks, hydrants are buried under drifts. Heating equipment works overtime to keep us warm. Take extra care to be safe during bad weather.
Careless disposal of smoking materials is a major cause of fires. Get good ashtrays & use them. Empty ashtrays in a safe place.
BASEMENT FIRES are often caused by vapors from flammable liquids drifting into contact with the furnace or water heater. Store these liquids in tightly closed containers.
Dry oily rags outside.
USE COMMON SENSE WHEN USING FIRE OR FLAME AROUND THE HOUSE!
If you notice a gas leak:
Open windows. Do not turn lights on or off. Go to a neighbor's house & report gas smell to the Fire Department.

federal emergency management agency
U.S. fire administration

FEM 1/108

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TEACHING

FAMILY FIRE SAFETY:

NINE EXHIBITS

Office of Planning and Education
U.S. Fire Administration
Federal Emergency Management Agency
Washington, D.C. 20472

TO THE READER

This manual describes an innovative family fire safety exhibit developed and displayed by the Children's Museum of Boston (Mass.), under an Office of Planning and Education grant. The exhibit is designed to integrate fire safety information into public tours of fire stations and can also be adapted for use in museums, schools, shopping centers and other settings. The nine exhibit modules described in this manual can be used singly, in combination with each other, or all together. We hope that local fire educators will find the manual a useful tool in planning and building their own fire safety exhibits.

OPE invites your comments on the manual, and looks forward to learning how you build and use your exhibit. Please write to: Office of Planning and Education, U.S. Fire Administration, Federal Emergency Management Agency, Washington, DC 20472.

Richard Strother
Associate Administrator
Office of Planning and Education
U.S. Fire Administration

TABLE OF CONTENTS

	Page
TO THE READER	ii
LIST OF FIGURES	iv
INTRODUCTION	1
THE NINE EXHIBIT MODULES	
#1 E.D.I.T.H. (Exit Drill in the Home)	3
#2 The Kitchen	17
#3 Stop, Drop, Roll, and Cool	29
#4 What Firefighters Wear	41
#5 Quiz	50
#6 The Firehouse	58
#7 Fire in the News	65
#8 "Saferway Company" Storefront	70
#9 Smoke Detectors	76
EVALUATING THE EXHIBIT	86
CONCLUSION	91

LIST OF FIGURES

		Page
1.1	Bedroom Window Escape	5
1.2	Bedroom Assembly and Installation	6
1.3	Bedroom Floor Blocks Construction	7
1.4	Bedroom Floor Blocks Construction (cont'd)	8
1.5	Bedroom Wall Panels Construction	9
1.6	E.D.I.T.H. Floor Plan Constructions	16
2.1	Kitchen Display	19
2.2	Kitchen Floor Plan and Wall Panels	20
2.3	Kitchen Display Cards	21
2.4	Kitchen Cans	23
2.5	"Show Us" Cards	25
2.6	Toast Tongs	28
3.1	Stop, Drop, Roll, and Cool Display	31
3.2	Stop, Drop, Roll, and Cool Construction	32
3.3	Stop, Drop, Roll, and Cool Figures	33
3.4	Match Flame Demonstration	36
4.1	Firefighter Gear Display	42
4.2	Child in Turnout Gear	49
5.1	Light-Up Quiz Board	52
5.2	Puzzle	57

LIST OF FIGURES (cont'd)

		Page
7.1	Fire News Exhibit	67
7.2	News Exhibit Construction	68
7.3	Fire News Layout	69
8.1	"Saferway Company" Storefront	72
8.2	"Saferway Company" Construction	73
8.3	Consumer Products Display	74
9.1	Ionization-type Smoke Detector	78
9.2	Photoelectric-type Smoke Detector	79

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INTRODUCTION

Over here, a girl climbs out of a window, then runs to a nearby tree. Over there, a young boy fits an electric coffee pot with a new cord. Standing before a rack of children's pajamas, a teenager carefully studies the sewn-in washing instructions.

What's going on here: school recess; kids playing house; a typical shopping trip? No. All of these people are learning fire safety through participation in an ingenious exhibit at the Children's Museum of Boston, Mass.

The exhibit combines the public's interest in fire house tours, key fire safety information, and techniques for involved audiences in booths and displays.

The Children's Museum exhibit planners first asked local firefighters what they liked and disliked most about conventional firehouse tours, and how they felt about building an exhibit. The following ideas, expressed by the firefighters, were incorporated into the exhibit design:

- Firehouse tours tend to focus on the apparatus and underemphasize fire safety. An exhibit would increase the fire safety element of the conventional tour.
- Although firefighters generally enjoy talking with children, some are unsure of the most effective way to approach different age and grade levels.
- Some firefighters enjoy working with their hands, and would be interested in building fire safety exhibits to use either within the station or as portable teaching devices to take on tour.
- The idea of the portable exhibit was preferred because arranging space for a permanent exhibit in the firehouse usually is not feasible.

The Children's Museum exhibit is made up of nine parts, or modules. Each module demonstrates an important area of fire safety. The overall design allows the modules to be used separately, or all together as a total unit.

The modules are:

1. A home escape plan teaches children how to get out of their homes safely during a fire. The key points covered are:
   - Having preplanned escape routes from the home
   - Getting out immediately, and meeting at a prearranged location
   - Crawling beneath smoke and checking closed doors for heat

- Using alternate exits if the normal exits are blocked
- Telephoning the fire department

2. A kitchen fire safety module presents such hazards as cooking while wearing loose sleeves, grease fires, children climbing onto stoves, and long cords on appliances.

3. A burn unit explains what to do if clothing catches fire: stop, drop, roll, and cool are the key elements. This module also demonstrates how to roll another individual who is on fire and how to cool burns with water. Fabric flammability also can be included.

4. The firefighter clothing display shows the protective gear which firefighters need at the fire scene.

5. A quiz component reinforces what the children have learned about fire hazards by having them match paired pictures.

6. A fire department display traces the history of the local fire department. This module also is designed to deter false alarms and harassment of firefighters.

7. An information center deals with fire in the news and shows how fire departments disseminate fire safety information in the local community. This display also can include information about arson, and ways to mobilize community action against this crime.

8. A storefront displays common consumer items, and explains why some are fire-safe and some are unsafe. The purpose of this module is to make consumers more aware of potential fire hazards in the goods they buy.

9. A smoke module emphasizes the "killer" aspects of smoke and stresses the value of installing smoke detectors.

In the following sections, each of these nine fire safety exhibit modules is illustrated and discussed in detail. These ideas may be used just as they are presented, or they can be adapted to suit your own specific needs.

MODULE #1
E.D.I.T.H.
(EXIT DRILL IN THE HOME)

I. THEME

Many deaths and injuries from fire could be prevented if people would plan emergency exits from their homes ahead of time and practice the exit plans regularly.

This exhibit provides the opportunity to practice an emergency evacuation and encourages participants to plan exits from their own homes.

II. BACKGROUND

People need to routinely practice using emergency exits from their home. In an emergency—when every second is important—individuals must be able to recall the actual motions that have been rehearsed. Since there is no time to rationalize actions or translate them from remembered words, the correct actions must be performed automatically.

The model bedroom in this exhibit works best when staff members accompany participants through each step of the exit drill. If the exhibit will be unattended from time to time, however, signs may be placed to direct visitors to a "Blue Route," a "Brown Route," and a "Purple Route." These signs allow parents and friends to help children as the staff would.

III. KEY INFORMATION

- Roll out of bed. Do not sit up. Fumes and heat are dangerous.
- Keep low in smoke. The best air is near the floor.
- Feel the door with the back of the hand. If the door is cool, open it carefully (bracing yourself against the door) and go quickly to the prearranged meeting place.
- If your door is hot, DO NOT OPEN IT. Go to a window instead.
- Call the Fire Department from a neighbor's phone or fire alarm box.
- Once outside, NEVER go back in.

IV. CONSTRUCTION

The key parts of the E.D.I.T.H. Bedroom exhibit are a bed, a door, and a window.

Children need few props; with their imaginations, they can fill in missing walls, roofs, and hallways. For simply planning an exit route, almost anything can be designated as the door or the window. Paper models could be used, for example.

If you want to practice making actual exits from doors and windows, you'll need the real things: a door that can be opened and a window strong enough to allow the roughest evacuees to climb through it. If you have the space, the ideal window construction would be made high enough to allow a child to learn to hang down and drop. Exit by rope ladder also could be practiced here.

A useful variation might be to construct a wall with a series of doors and windows which have different types of handles and locks. Can the child manage these different mechanisms? Is his or her own bedroom door and window-type represented? Can he or she open a window with storm windows? With screens?

Figure 1.1

BEDROOM WINDOW ESCAPE

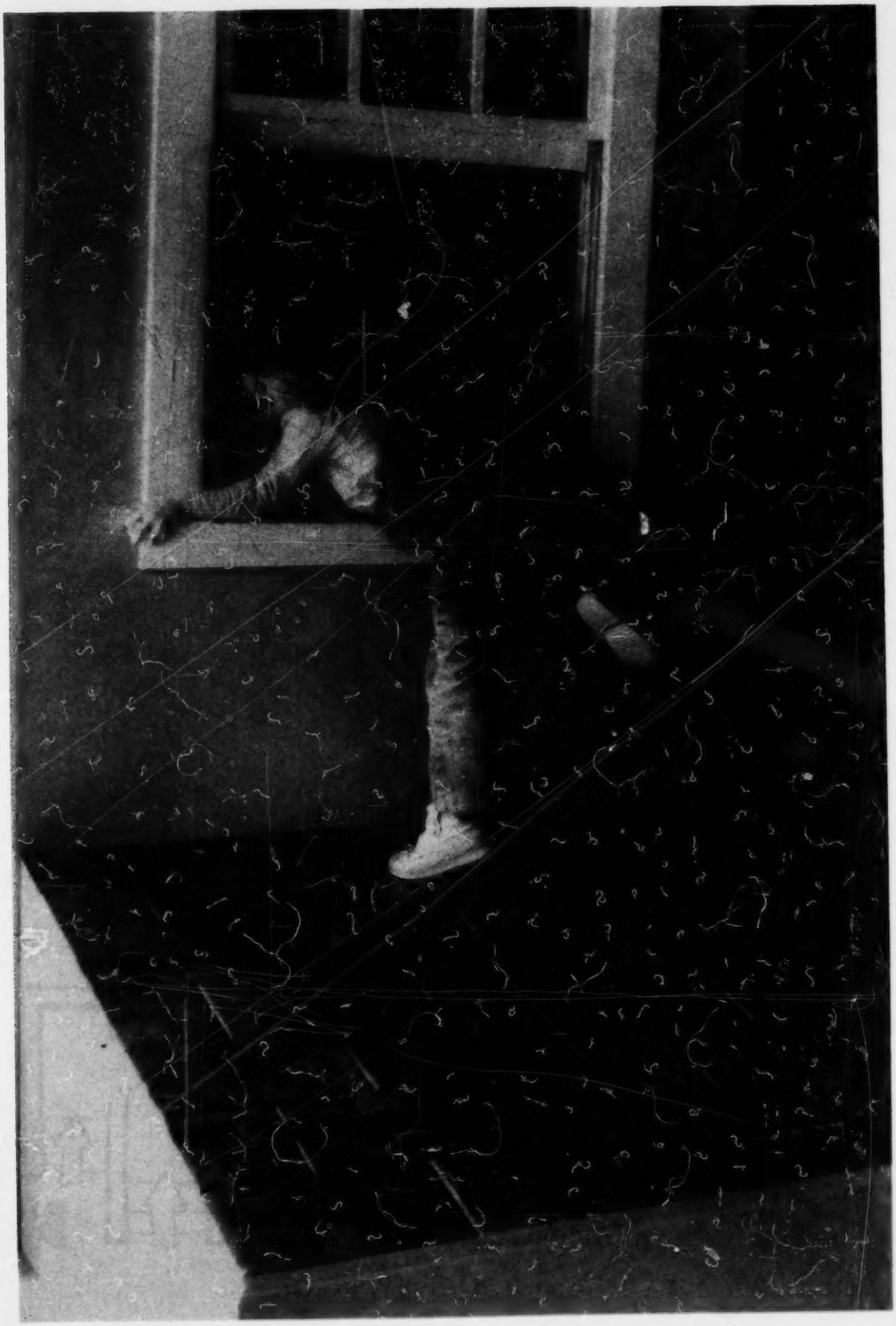
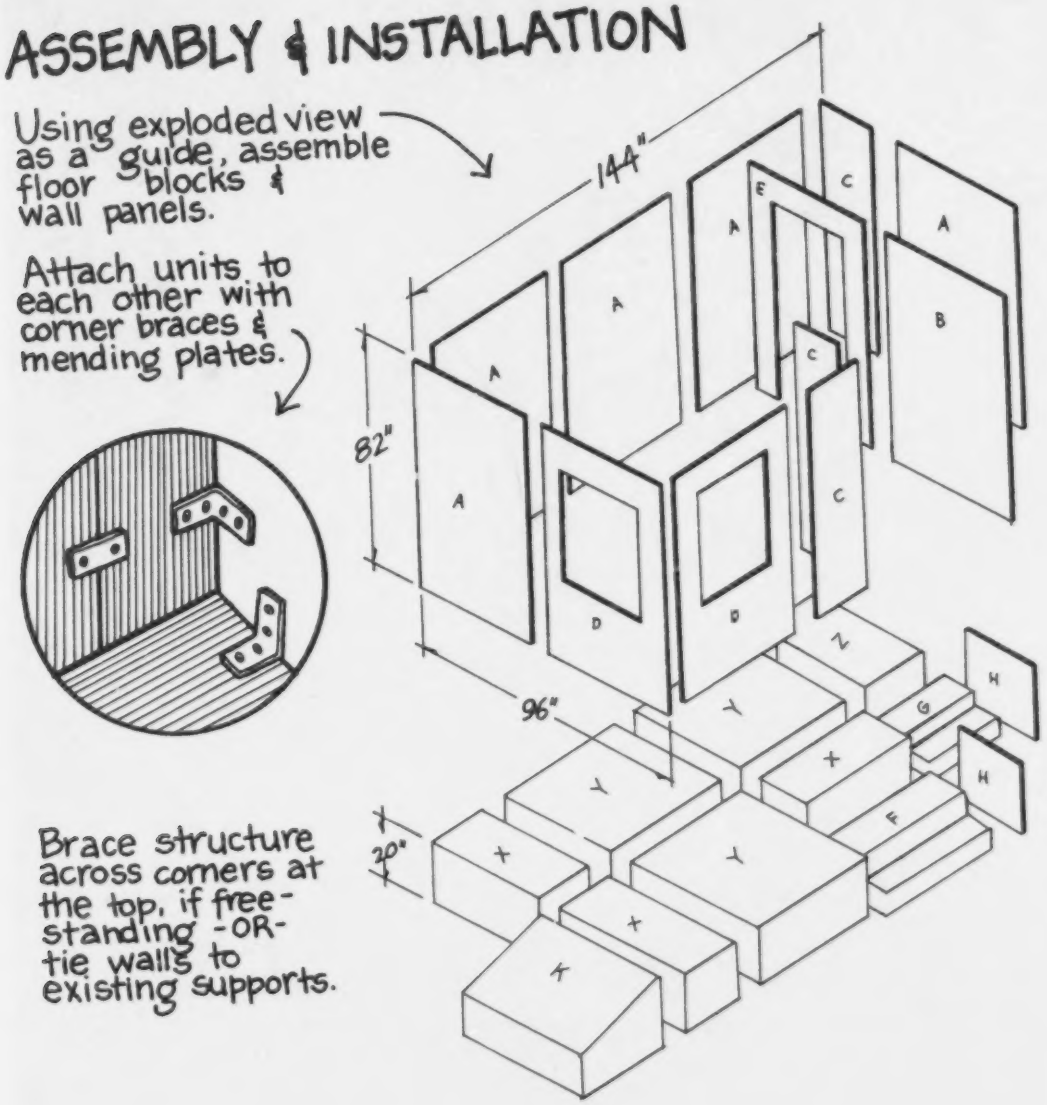


Figure 1.2

BEDROOM ASSEMBLY AND INSTALLATION



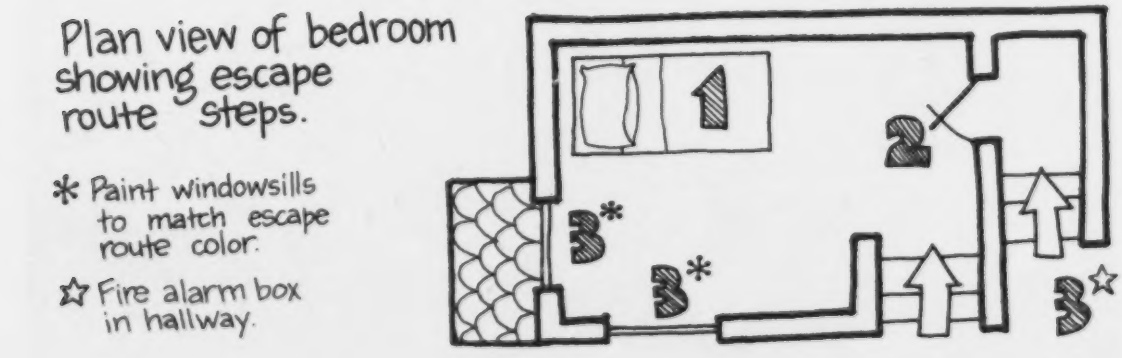


Figure 1.3

BEDROOM FLOOR BLOCKS CONSTRUCTION

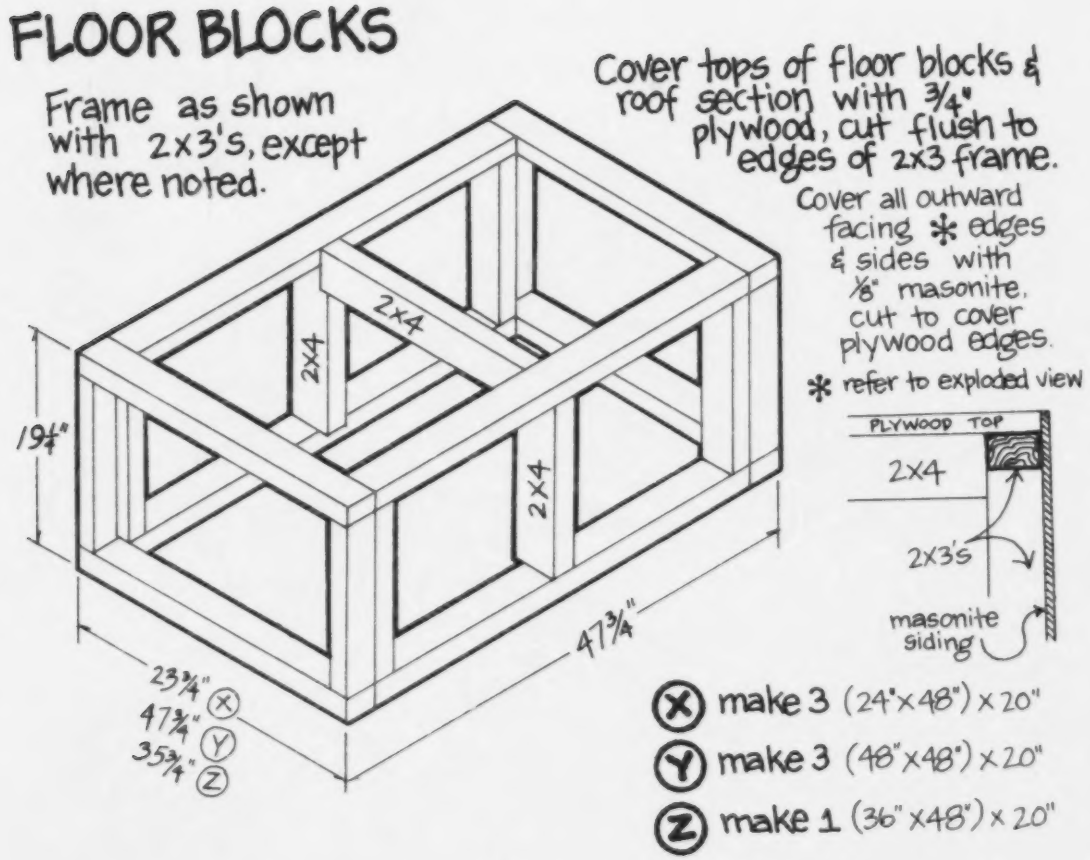

FLOOR BLOCKS
Frame as shown with 2x3's, except where noted.
Cover tops of floor blocks & roof section with 3/4" plywood, cut flush to edges of 2x3 frame.
Cover all outward facing * edges & sides with 1/8" masonite, cut to cover plywood edges.
* refer to exploded view
2x4
2x4
2x4
19 1/4"
23 3/4" (X)
47 3/4" (Y)
35 3/4" (Z)
47 3/4"
PLYWOOD TOP
2x4
2x3's
masonite siding
(X) make 3 (24"x48") x 20"
(Y) make 3 (48"x48") x 20"
(Z) make 1 (36"x48") x 20"

Figure 1.4

BEDROOM FLOOR BLOCKS CONSTRUCTION

(continued)

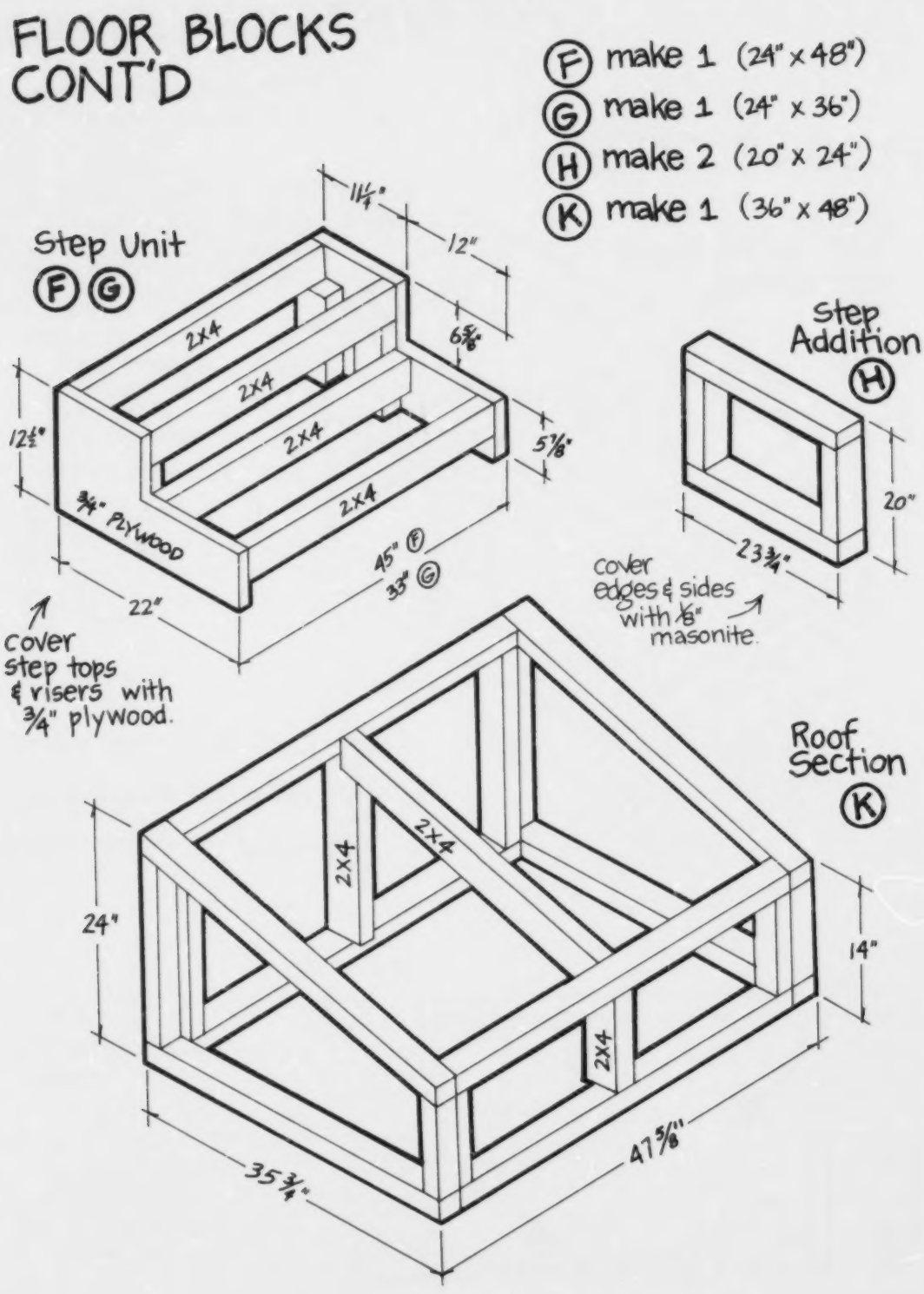


Figure 1.5

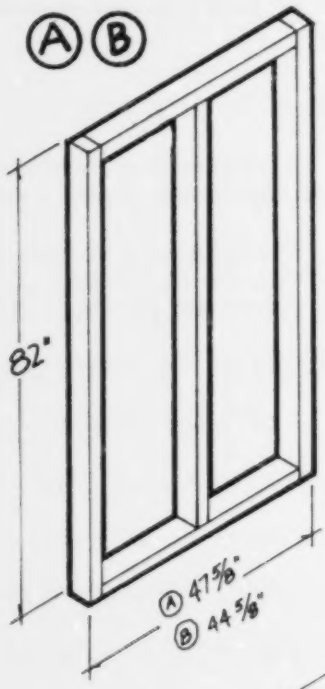
BEDROOM WALL PANELS CONSTRUCTION

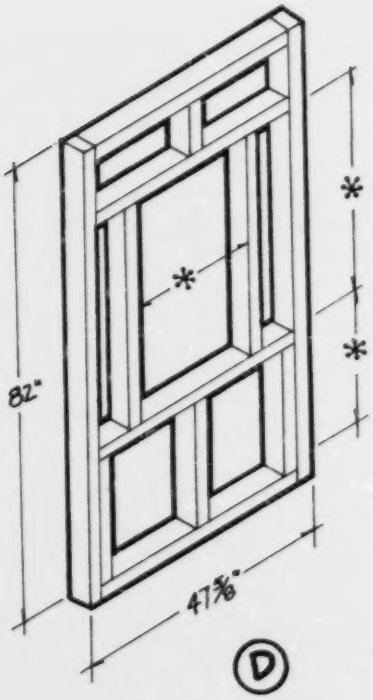
WALL PANELS

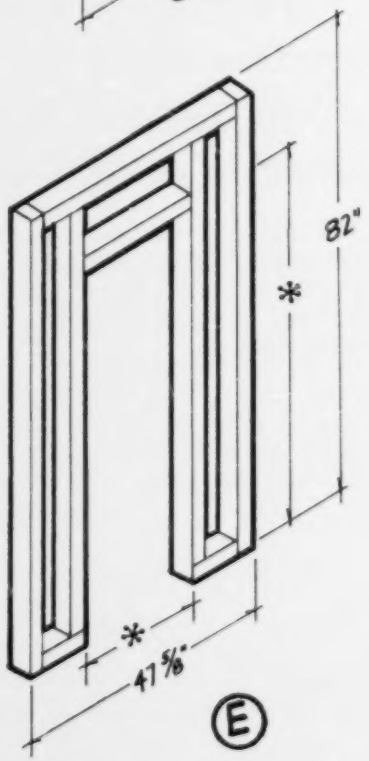
Frame as shown with 2x3's.
Cover edges with ⅛" masonite strips.
Then cover both sides with ⅛" masonite.

* Frame Ⓓ & Ⓔ to fit available windows and door.

Ⓐ make 5 (48" x 82")
Ⓑ make 1 (45" x 82")
Ⓒ make 3 (21" x 82")
Ⓓ make 2 (48" x 82")
Ⓔ make 1 (48" x 82")







E.D.I.T.H.: FIRST ACTIVITY -

PRACTICE ESCAPE

FOCUS OF ACTIVITY:

Participants practice escaping from the Bedroom, varying the routes according to the stated conditions.

Participants also may discuss different situations and their implications; and learn the importance of having a prearranged meeting place, two routes out of a room, and an alarm to alert others to fire.

SUGGESTED GROUPS/AGES:

Four years old and older.

SUGGESTED GROUP SIZE:

One to six at a time.

APPROXIMATE TIME REQUIRED:

Varies with size/age of group.

MATERIALS NEEDED:

The Bedroom exhibit; the Brown, Blue, and Purple Route cards.

METHOD OF PRESENTATION:

Each of the route cards can be mounted on heavy cardboard, laminated, and posted outside of the Bedroom display. As one person begins the exit drill, another can narrate the Route, reading from the card. The following information provides guidelines for the exhibit staff person, along with narratives for the route cards.

THE BLUE ROUTE

IMPORTANT INFORMATION

The Blue Route begins at the bed. Either an exhibit staff person or other adult can serve as a fire educator/instructor. The educator asks the children to sit on the bed, then explains that smoke can reach people and kill them even before the flames of a fire get to their bedroom. A smoke detector, loud enough to wake people at night, can warn people about the presence of smoke.

The fire educator should walk to the door of the bedroom, point to the smoke detector, and say: "We will pretend that the alarm has just sounded. We must get out of the house immediately."

First, have someone roll out of bed and crawl to the door. Children may want to open the door, but stop them and tell them to feel the door before opening it.

In the Blue Route the door is cold, so proceed to the "prearranged meeting spot," which in this Exhibit is the fire alarm. The last person out shuts the door.

Discuss: the prearranged meeting place is important because family members must know who is still in the house and in need of rescue when firefighters arrive. When using an alarm box, someone should wait at the box for the fire department to arrive, and then direct them to the fire.

Explain why it is important not to go back into the house for <u>any</u> reason. Even the smoke of a small fire can kill.

ROUTE CARDS

You wake up when you hear the hall smoke detector buzzing. <u>Roll</u> out of bed and <u>crawl</u> to the door.

Feel the door. It is not hot. Open it slowly, and walk out of the house to the fire alarm box.

This is where the family had planned to meet. Pull the alarm and wait for the rest of the family.

Does your family have a place to meet in case of fire? Choose a nearby street light, a tree, or a fence. Just make sure the family <u>plans</u> and <u>practices</u> where to meet. Where there is no alarm box, appoint one family member to go to a neighbor's house and call the fire department.

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THE BROWN ROUTE

IMPORTANT INFORMATION

Again, the children sit on the bed. The fire educator will discuss what to do when there is smoke in the bedroom. The smoke detector will alert them, but they must be sure to drop to the floor so they can breathe better.

Ask the children what to do when smoke is present. Some may say: "Open a window." Emphasize that the primary exit should be the bedroom door. If they cannot leave by this exit, then they should crawl to the window. Children must take care in opening the window and be prepared to exit immediately. Opening the window will provide more air for a fire which may be burning just outside the bedroom door.

Children also may suggesting hiding under the bed. The fire educator should stress that the bed will not protect them. They must get out.

Have the children crawl to the door. In this exercise the door is hot. Once the children feel the door, have them crawl to the window. Remind them to stay low.

This route is on the first floor. The fire educator can go around to the other side of the window and help the children out of the window. Tell them to go to the prearranged meeting place. Have them pull the alarm and wait.

ROUTE CARDS

You wake up coughing. The room is full of smoke. Roll out of bed and crawl to the door.

Feel the door. It is HOT. Do not open the door, because the fire is right outside. Instead, crawl to the window.

Open the window and go out feet first. Go to the fire alarm box and pull the alarm.

But, what if the window won't open? Is there a chair to break it? If you do have to break the window, cover the jagged edges with a rug or blanket before climbing out.

THE PURPLE ROUTE

IMPORTANT INFORMATION

Everyone sits on the bed. The fire educator will explain that, this time, the bedroom is on the fourth floor. There is no fire escape and if the children were to jump, they might kill themselves.

After the children crawl to the door to check it and find it hot, ask them what they would do. The fire educator should explain that they can open the window and yell for help.

Have the children crawl to the window and hang an imaginary sheet out of the window to alert the fire department. Explain that they will be rescued and not to panic.

ROUTE CARDS

You are in your bedroom in a fourth floor apartment. You wake up when you hear the fire alarm bell and people shouting. Roll out of bed and crawl to the door.

Feel the door. It is HOT. There is fire on the other side and smoke is pouring in. Use a make-believe rug or blanket to stuff in the space under the door.

Crawl to the window and open it. Call for help. Pull a make-believe sheet off the bed and hang it out the window to signal for help. WAIT. Don't panic. You will be rescued.

E.D.L.T.H.: SECOND ACTIVITY -

DRAWING FLOOR PLANS WITH EXIT ROUTES

FOCUS OF ACTIVITY:

After the visitors have practiced making an emergency exit from the Bedroom exhibit, invite them to study a drawing of an exit plan. Then have them make exit plans for their own homes.

Each participant will make a drawing showing at least two exits from his or her own bedroom. The participants should be encouraged to practice real exit drills at home.

SUGGESTED GROUPS/AGES:

10 years old and older.

SUGGESTED GROUP SIZE:

Eight to 10 per instructor.

APPROXIMATE TIME REQUIRED:

20 to 40 minutes.

MATERIALS NEEDED:

The Bedroom exhibit, Bedroom exhibit floor plan showing exit routes, paper, pencil, and:

- For the small box model: small box (preferably in the same proportions as the Bedroom); blocks of polystyrene foam, wood, or sponge; marking pens; cardboard; glue.
- For the toothpick plan: construction paper, toothpicks, glue, marking pens.
- For floor plans on graph paper: graph paper, pencil or marking pens.
- For the blackboard: blackboard, paint, chalk, eraser.
- For the geoboard: graph paper, plank of wood (8" x 10" or larger), small brass finishing nails, rubber bands, hammer.
- For the pegboard: piece of pegboard, short pieces of dowel rod or pegs, pencil sharpener, yarn.

METHOD OF PRESENTATON:

The Bedroom exhibit floor plan shows participants how to get out of the bedroom using two different routes.

The instructor demonstrates, using the Bedroom exhibit. First, have the participants go to the exhibit. Discuss possible exit routes and have everyone practice them. Then the instructor shows how these routes look on the drawing of the Bedroom's floor plan. Next, participants draw floor plans of their own bedrooms and mark exit routes. The instructor helps individuals solve potential problems (Does this window open easily? Is there a roof below?), and reminds them of the importance of planning alternate routes and of having a prearranged meeting place.

The Small Box Model — This activity will help children avoid the difficulty of "transferring" from a three-dimensional room to a two-dimensional drawing of the room.

Inside a small box, place a block to represent the bed. Place it in the same relative position as the exhibit's bed. Is there a window or door in the wall along this side of the bed? No. How about this wall at the foot of the bed? Yes, a door. Draw the door on the side of the box. Now this wall: a window. Draw it in. Now this wall: another window. Draw it in. To turn this into a floor plan, go back to the model bed. Represent the bed by drawing an outline on the floor; remove the block. Draw a line on the floor where the wall is. Show the door as a break in the line. Continue along the other walls. Show the location of windows with double lines. You then could remove the sides of the box and mount the floor plan on a larger piece of cardboard. Show exit routes going out the door and the window.

The Toothpick Floor Plan — Even adults sometimes have trouble getting their drawings right without a struggle. This method is particularly helpful for whole-floor, many-room floor plans.

On construction paper, lay out a line of toothpicks to represent the walls of the rooms. When the toothpicks satisfactorily depict the room or rooms, glue them in place. Indicate places for doors and windows by using colored toothpicks, by leaving door/window locations blank, or by using two toothpicks side by side (see Figure 1.6).

Floor Plans on Graph Paper — A fairly tidy floor plan can be drawn on graph paper, but achieving the right proportions may require some trial and error. The following three devices offer different ways of making a floor plan on a grid.

The Blackboard: On a blackboard (or a smooth board painted with blackboard paint), paint a grid of evenly spaced dots. With chalk, participants can connect the dots, erasing mistakes, until they get their plans right. They then can transfer the drawing to graph paper by counting the squares.

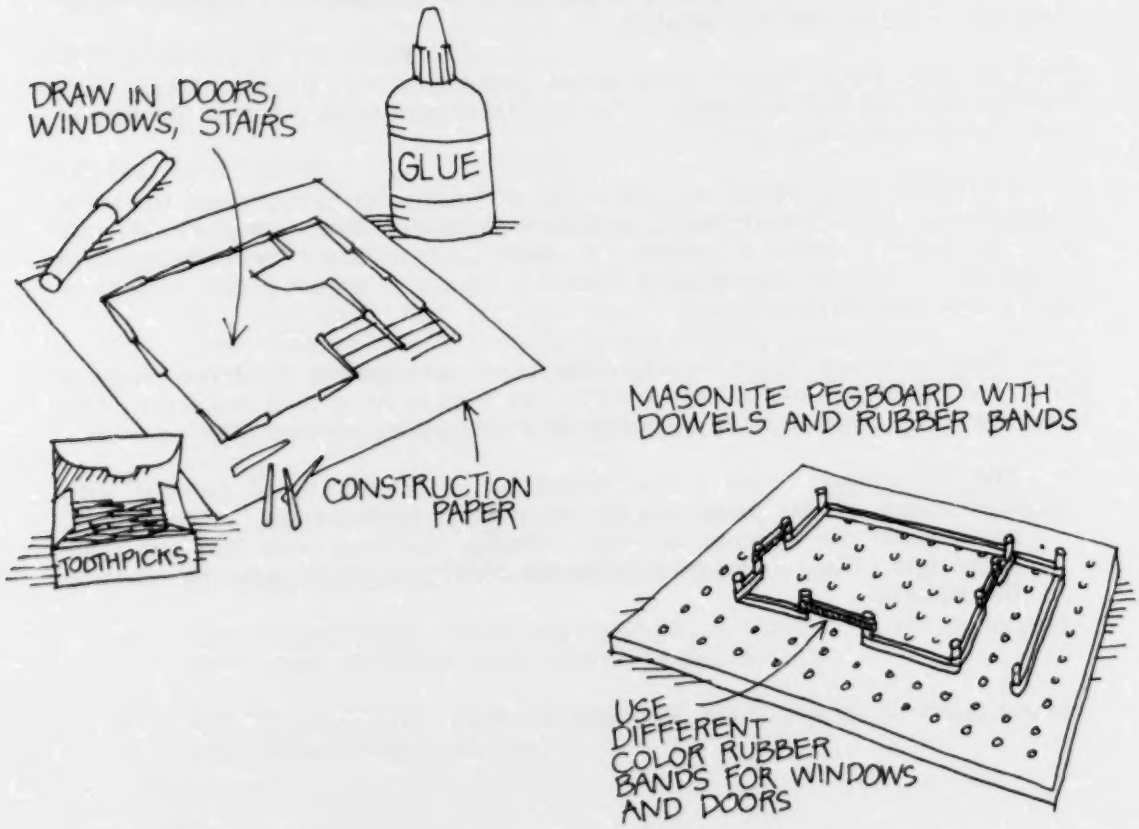
To paint the grid on the blackboard, cover the blackboard with a piece of pegboard (or graph paper which has holes punched out at the line intersections). From directly overhead, spray paint. Use a dark color, so that the white chalk will show up when the dots are connected. Another way to paint a grid is to use blackboard paint on a previously painted piece of wood. Before applying the blackboard paint, use gummed dots to mask intersections of the grid; peel them off after the paint dries. An even simpler method is to stick gummed dots on a blackboard. These will stand up to a limited number of drawings and erasures.

The Geoboard: A geoboard, a common "developmental" toy for children, is a grid of nails or pegs with rubber bands connecting them. The rubber bands can be rearranged in an infinite number of patterns. To make a geoboard, lightly glue or tape a piece of graph paper to a piece of wood. Hammer brass finishing nails at the line intersections. Remove the paper. Rubber bands of different sizes and colors work well on geoboards.

The Pegboard: The pegboard is similar to the geoboard, but uses the pegboard holes for the grid. Short pieces of dowel can be sharpened with a pencil sharpener to make them fit into the holes. Wrap yarn or rubber bands around the pegs.

Figure 1.6

E.D.I.T.H. FLOOR PLAN CONSTRUCTIONS


DRAW IN DOORS, WINDOWS, STAIRS
GLUE
CONSTRUCTION PAPER
TOOTHPICKS
MASONITE PEGBOARD WITH DOWELS AND RUBBER BANDS
USE DIFFERENT COLOR RUBBER BANDS FOR WINDOWS AND DOORS

MODULE #2
THE KITCHEN

I. THEME

The kitchen is the "hot spot" of the home. Many fires begin there; many burns and scalds happen there. Most of us like to work and play in the kitchen, and that's where we learn some of our first skills in handling fire and heat.

II. BACKGROUND

The Kitchen exhibit is designed to increase the fire safety awareness of an influential group of people—parents—in one of the most dangerous rooms in the house. Originally, this exhibit was designed to appeal specifically to adults, but the Kitchen proved to be very popular with children. It therefore should be constructed with their safety in mind. Children were drawn immediately to the sink, the telephone, the table, and the stove. As a part of their impromptu play, children were very receptive to lessons in kitchen safety. The Kitchen is also a good exhibit for teaching teenagers to be cautious when caring for younger children, as well as giving them tips for setting up future safe housekeeping.

The Kitchen first was planned as a static exhibit which visitors would merely observe, something like an historic home. As this exhibit was developed, however, it became more participatory. The Kitchen display can be used effectively either way.

III. KEY INFORMATION

Key information may be found in the First Activity section, following, under "Questions and Answers."

IV. CONSTRUCTION

A stove and a sink (acquired at a junkyard), a dinette set, and a counter are all it takes to make the Kitchen. Supporting walls can frame the Kitchen, but existing walls may be used if the exhibit is to remain in one place.

A variety of interesting working displays can be built into the Kitchen, once it is in place. Display cards can be used to draw attention to the safety features of the fully furnished kitchen (see examples,

following Figure 2.3). A particularly effective exhibit could be made by providing the participants with pairs of interchangeable items to be installed in the Kitchen. These might include: two pairs of curtains (one short and one long); extension cords (long and short); an electrical octopus outlet and a fused outlet strip; potholders with and without holes; safe and unsafe ashtrays; tablecloths and placemats; locked and unlocked storage cabinets; greasy and clean broiler pans; a drawer full of loose pot lids and a pot lid holder; and frayed and new electrical cords. Participants can replace the hazardous objects with the safer ones.

As an alternative to building a kitchen, you might be able to use an existing kitchen in a school, home, fire station, or church; or a model kitchen in a department or appliance store. The props for a borrowed kitchen are the same as those for a specially-constructed exhibit kitchen.

If a life-size kitchen is not feasible, it is possible to make a kitchen puzzle; using interchangeable "safe" and "unsafe" pieces. Draw or photograph the same kitchen twice, once furnished with safe items and then furnished with unsafe items. Glue the two illustrations to thin plywood or stiff cardboard. Cut both the safe and unsafe versions simultaneously, so that the safe and unsafe pairs have identical shapes. The participants "build the kitchen" (assemble the puzzle), trying to select only the "safe" pieces.

Figure 2.1

KITCHEN DISPLAY

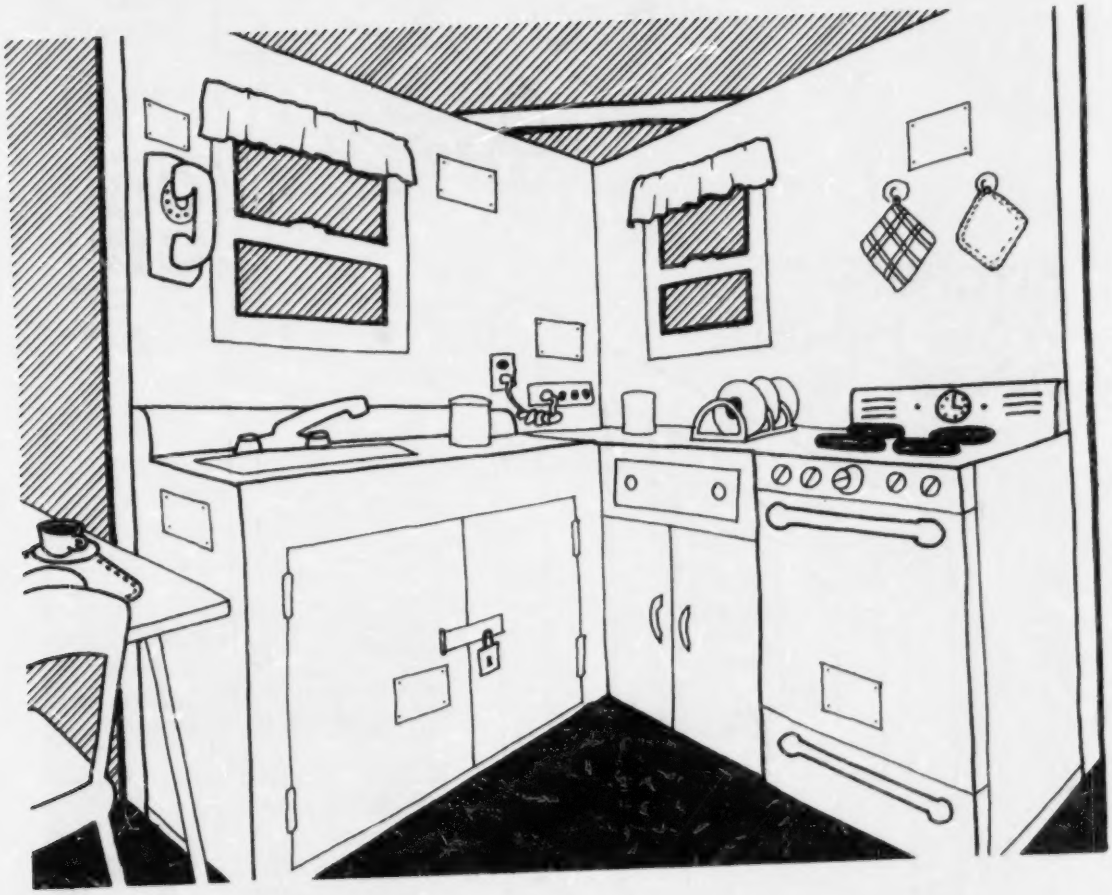
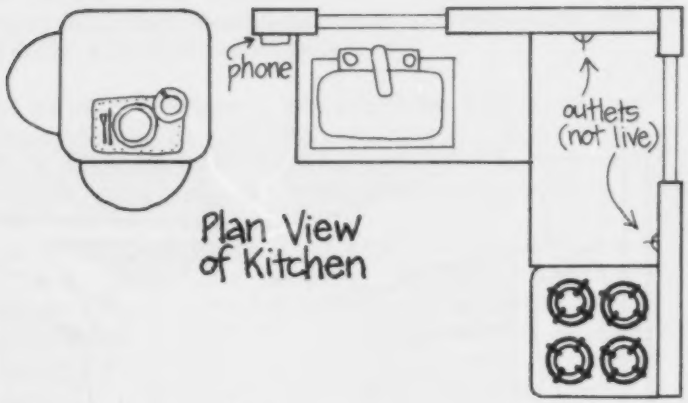
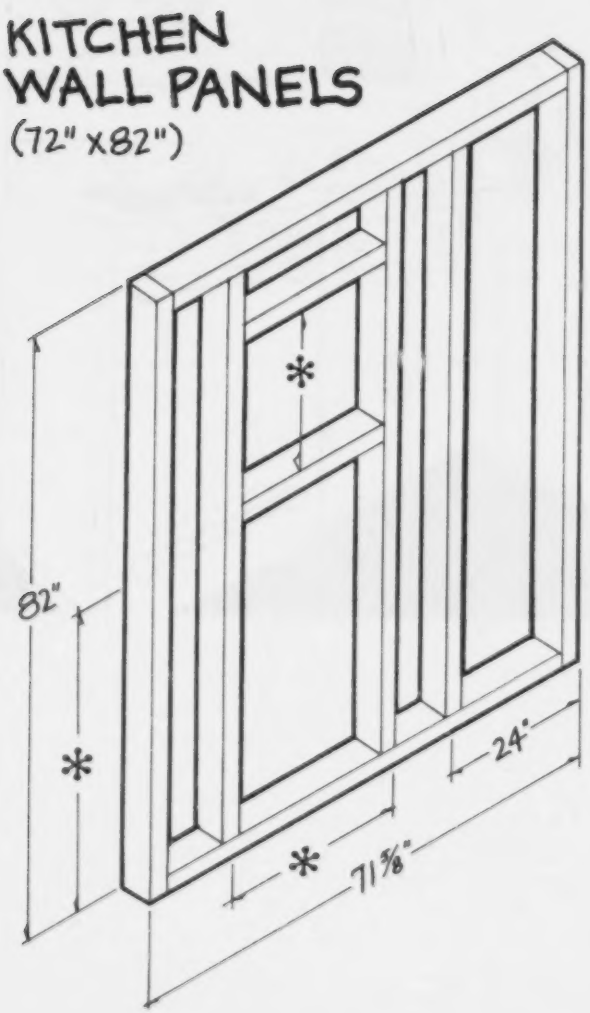


Figure 2.2

KITCHEN FLOOR PLAN AND WALL PANELS





make 2 of these.

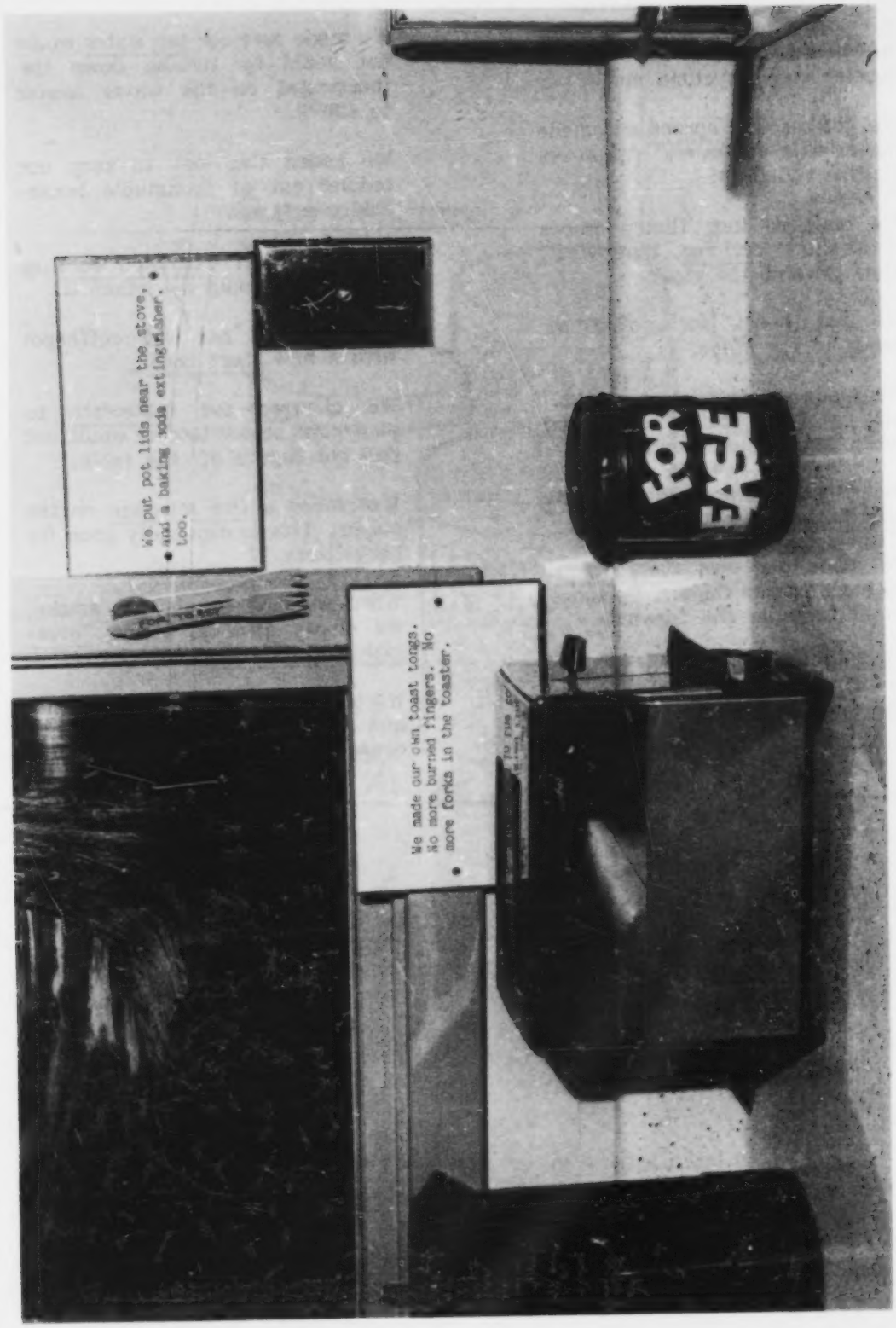
* Using 2x3's, frame to fit available windows.

Cover edges with strips of 1/8" masonite.

Then cover both sides with 1/8" masonite.

Figure 2.3

KITCHEN DISPLAY CARDS



KITCHEN DISPLAY CARDS

We moved chairs away from the stove and counter so that our toddler couldn't climb up.

We got sensible aprons and made ourselves a reminder: Apron on; sleeves rolled up!

We replaced long flimsy drapes with short curtains that won't blow towards the stove.

We put hooks for potholders handy to the stove.

We made an "appliance station" with a fused outlet strip and threw out old extension cords.

We put pot lids and a baking soda extinguisher near the stove.

We made our own toast tongs. No more burned fingers. No more metal forks in the toaster.

We shortened this cord so that the fry pan won't fall off the edge of the counter.

We made sure our tap water would not scald by turning down the thermostat on the water heater to 120°F.

We added this lock to keep our toddler out of flammable household chemicals.

We taped this extension cord so our toddler could not reach it.

We upgraded our old coffeepot with a new short cord.

We changed our tablecloth to placemats so our toddler would not pull hot liquids off the table.

We placed a fire message on the phone. This is especially good for babysitters.

When we have guests who smoke, we empty ashtrays in our "overnight butt station."

We bought a brand new broiler pan and a good grease cleaner for the oven.

Figure 2.4

KITCHEN CANS

THE KITCHEN: FIRST ACTIVITY -

"SHOW US" CARDS

FOCUS OF ACTIVITY:

Participants are made aware of basic kitchen safety practices, and provided an opportunity to "act out" these practices.

SUGGESTED GROUPS/AGES:

Eight years old and older.

SUGGESTED GROUP SIZE:

This activity works well with individuals, and with groups of up to 20. The number of cards and the size of the available space may limit the number of participants.

APPROXIMATE TIME REQUIRED:

Two to 20 minutes

MATERIALS NEEDED:

Sturdy cardboard, tape for hinges, marking pens.

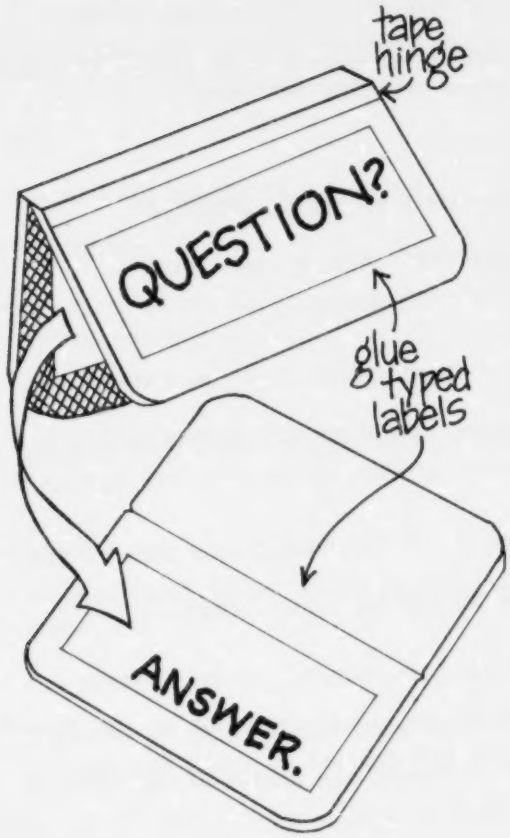
METHOD OF PRESENTATION:

Hinged cards are used to present the information. The outside of each card asks a question about fire safety; the answer appears on the inside. Adults who visit the exhibit can read the questions and check their answers on the inside of the card. For adults, the cards therefore are a self-correcting quiz. Children may enjoy either guessing the answer aloud or "acting out" the answer through role playing, with or without checking the inside of the card for the answer. Each child should choose a card. Ask: "Do you think you know the answer? If you do, go in to the kitchen and act out the answer, using the things that you find there. You may look inside the card to be sure that your answer is correct." When the child has finished answering or acting, the instructor may expand on the information.

answer. Each child should choose a card. Ask: "Do you think you know the answer? If you do, go in to the kitchen and act out the answer, using the things that you find there. You may look inside the card to be sure that your answer is correct." When the child has finished answering or acting, the instructor may expand on the information.

FIGURE 2.5

"SHOW US" CARDS



QUESTIONS AND ANSWERS

Q. Where is a safe place to keep matches?

A. Store matches in a can with a tight lid. Place matches out of reach of children.

Q. If you were going to cook, how would you keep your clothes safe?

A. Wear an apron; roll up your sleeves.

Q. How can you shorten the cord on your coffee pot?

A. Replace the long cord with a short cord. Or, make a loose coil with a longer cord; avoid crimping the cord.

Q. Where can you safely empty an ashtray?

A. Empty ashes and butts into a metal can.

Q. What do you do when grease in a pan catches fire?

A. Turn off the heat. Smother the flames with a pan lid or baking soda.

Q. What would you do if you burned your arm on the oven?

A. Put cold water on the burn right away.

Q. What is the safest way to place a pot on the stove?

A. Turn the handle in toward the center of the stove, so that it does not stick out over the edge.

Q. If the broiler pan catches fire, what should you do?

A. Leave the pan where it is. Close the broiler door and turn off the heat.

THE KITCHEN: SECOND ACTIVITY -

TOAST TONGS

FOCUS OF ACTIVITY:

Participants make a safe tool for picking up hot toast, meanwhile discussing kitchen safety.

SUGGESTED GROUPS/AGES:

Although anyone over three years old can participate, ages eight and older are recommended. Family groups and senior citizens, particularly, enjoy this activity.

SUGGESTED GROUP SIZE:

This activity works well with groups of any size.

APPROXIMATE TIME REQUIRED:

30 minutes, including 15 to 20 minutes for the glue to dry (which can be used for the "Show Us" Cards activity).

MATERIALS NEEDED:

Wooden forks (or physicians' wooden tongue depressors), small blocks of wood, white glue, letter stamps and ink pad (or colored markers).

METHOD OF PRESENTATION:

Participants make wooden toast tongs, following the instructor's example. The main ideas to get across are:

- Toast tongs can prevent burned fingers when handling hot toast
- Wooden tongs are safer than metal tongs or a fork near electrical appliances, and are less likely to damage the toaster
- Always unplug the toaster before poking for stuck toast
- Toasters should be placed away from curtains and low overhanging cabinets

330-254 O - 80 - 5 : QL 3

TEACHING TIPS:

After showing a finished pair of wooden toast tongs, invite the participants to join you in making their own sets. Have the participants decorate one side of each of two forks with the letter stamps or colored markers. Then glue the forks to either side of a small block of wood, as shown in Figure 2.6. Present the main ideas while the participants are constructing the tongs.

FIGURE 2.6

TOAST TONGS

MODULE #3
STOP, DROP, ROLL, AND COOL

I. THEME

Nowhere is the need for knowledge of fire characteristics more urgent than in the first moments after clothing is accidentally ignited. In the "Stop, Drop, Roll, and Cool" exhibit, visitors practice the best and quickest response to a clothing fire. Instinctive behavior works against people: they panic and run, fanning the flames. People must understand the best response, and they must practice to make the response automatic.

II. BACKGROUND

The "Stop, Drop, Roll, and Cool" exhibit is appropriate for all ages. Everyone should practice getting on the floor, smothering imaginary flames by rolling directly on them, shielding the face with the hands, and then cooling the burn with water. Flames burn UP. Dropping and rolling stops the flames from spreading. Older children should learn the reasons why "Drop and Roll" works, and how fire can be smothered. Adults should learn something about the flammability of different materials and the relative fire safety of various clothing styles and materials.

III. KEY INFORMATION

If your clothes catch fire, ACT FAST:

STOP do not run; running fans the flames.

DROP to the floor.

ROLL on the flames to smother them.

COOL the burn IMMEDIATELY with water. Children should report burns to their parents or other adult, who may wish to call a physician.

IV. ADDITIONAL RESOURCES

- Project Burn Prevention
  Burns, Boston, MA 02114

  Filmstrips and other materials about people who get burned, as well as a set of matching cards concerning hazardous and safe conditions.

- Shriners Burns Institute
  51 Blossom Street
  Boston, MA 02114

  Clothing from burn victims and information on burn care. These materials (and others) can be used to stimulate discussion and illustrate points about clothing fires.

- National Fire Protection Association
  270 Atlantic Avenue
  Boston, MA 02210

  "Learn Not to Burn" 16mm color/sound film. Dick Van Dyke demonstrates how to prevent hazards in the home.

Figure 3.1

STOP, DROP, ROLL, AND COOL DISPLAY

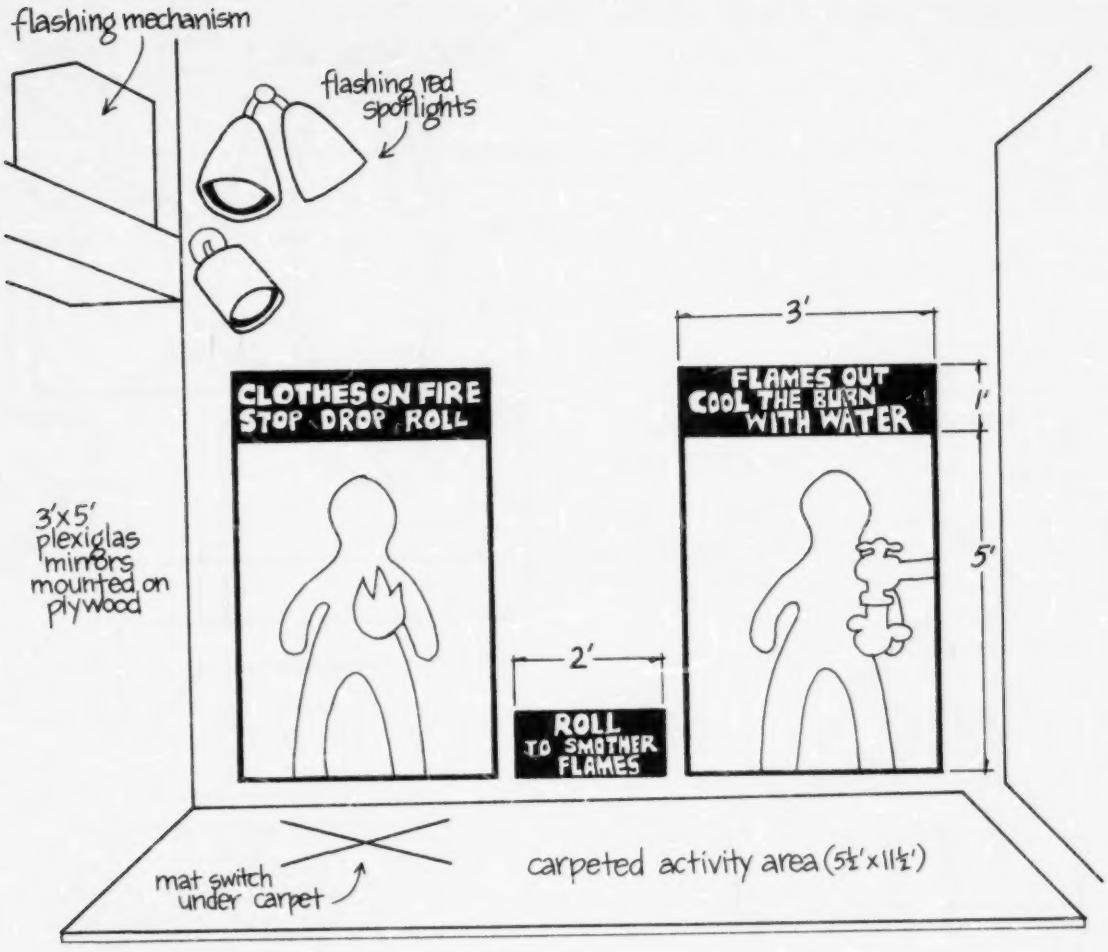


Figure 3.2

DROP, ROLL, AND COOL CONSTRUCTION

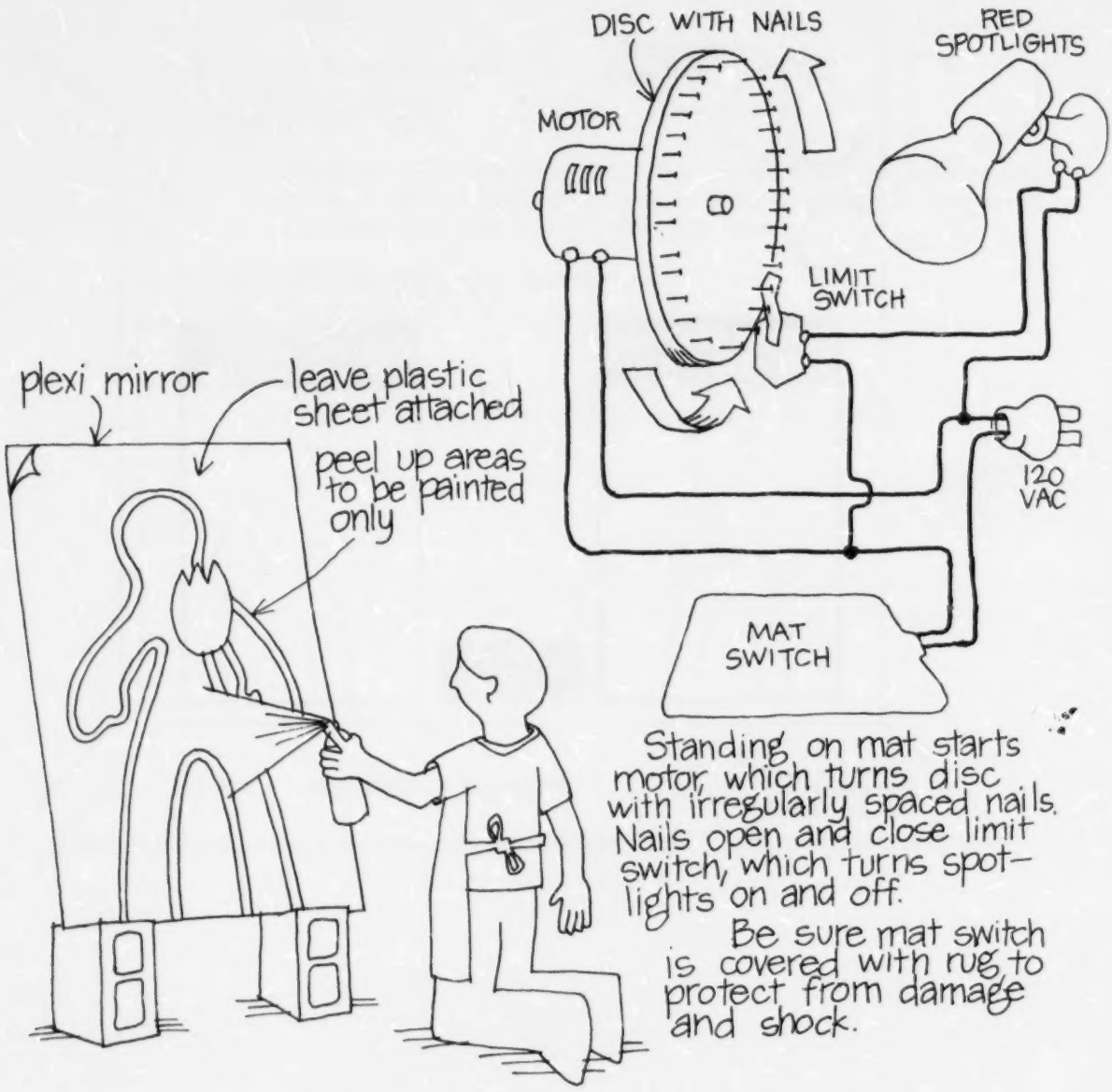
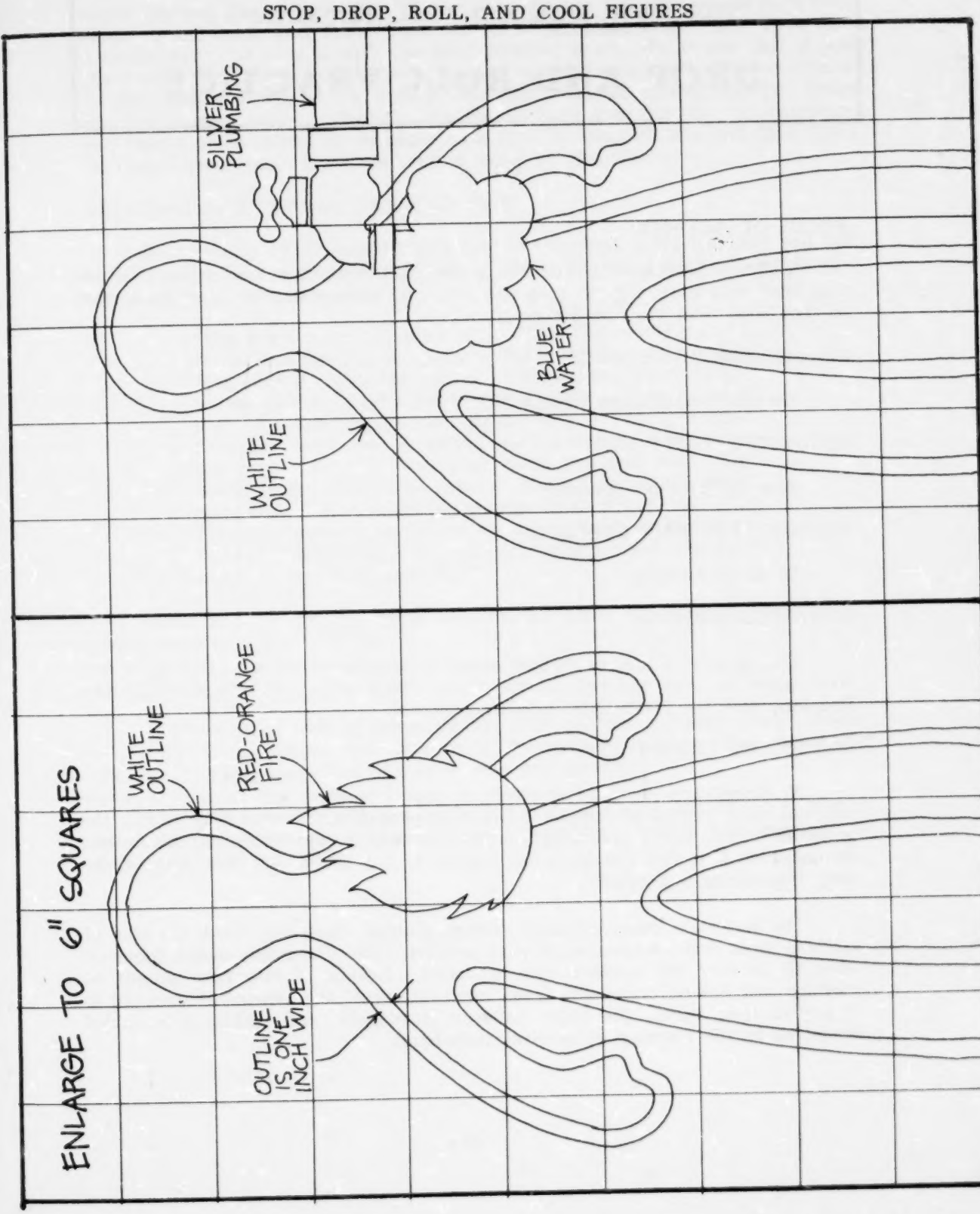

DISC WITH NAILS
RED SPOTLIGHTS
MOTOR
LIMIT SWITCH
plexi mirror
leave plastic sheet attached
peel up areas to be painted only
120 VAC
MAT SWITCH
Standing on mat starts motor, which turns disc with irregularly spaced nails. Nails open and close limit switch, which turns spot-lights on and off.
Be sure mat switch is covered with rug to protect from damage and shock.

Figure 3.3

STOP, DROP, ROLL, AND COOL FIGURES



STOP, DROP, ROLL, AND COOL: FIRST ACTIVITY -

DROP AND ROLL PRACTICE

FOCUS OF ACTIVITY:

Children practice the Stop, Drop and Roll; learn that flames burn UP, so that they will know why to drop and roll; and discuss how clothing fires start so that such fires may be prevented.

SUGGESTED GROUPS/AGES:

Grades Kindergarten through 6th

SUGGESTED GROUP SIZE:

Five to eight per leader.

APPROXIMATE TIME REQUIRED:

10 to 20 minutes.

MATERIALS NEEDED:

Photographs, films, newspaper articles, samples of burned clothing, a rug, some place to drop and roll on the floor, crepe paper, and tape. Optional: fireplace matches (extra long wooden matches).

METHOD OF PRESENTATION:

In almost any group of children, at least one child will know of a person who has been burned or scalded. The child probably will be willing to tell the group about it. Without preaching about carelessness, the instructor should then comment on how fire accidents can happen to any of us, and that they can be very frightening and painful.

The materials (news clippings, burned clothes, film) help make the idea of clothing fires real—connected to real persons. The discussion should focus on what to do once the accident has happened. Details of how fire spreads on clothing and how it burns skin (even explanations of the treatment involved in trying to heal burns, for older children, teenagers, and adults) give added incentive to the learning of survival techniques.

After explaining how accidents can occur, the instructor might demonstrate the way flames burn UP. "If your pants caught fire, you should raise your hands up and cover your face. Now why would you need to do that?" Show how a match burns when held with the head pointing down. Point out that if you stood still, the flames would quickly burn upward to your head. Then continue: "If you drop and roll on the ground, the fire would be slowed and you could smother it more easily." To help children practice drop and roll, the instructor can tape a piece of red crepe paper to a spot on their clothes and have them lie down, cover their faces, and roll directly on the "flame."

ALTERNATE METHOD OF PRESENTATION:

Occasionally, children and adults may be reluctant to try the Drop and Roll activity, especially when other members of the public are present. The following sequence may sometimes succeed:

> "You don't want to try it? OK. Well, how would you like to see me do it? I'll pretend that my shirt has caught fire, here at my waist. Quick. I drop down. I'll roll right on the flame. That's smothering it. There, the flame is out. If I didn't know what to do, do you think you could help me. Let's see. Pretend I started to run. What would you say? And if I didn't stop, could you grab me? That would help. OK. Now what? Shall I just stand here? No? OK. I'm down on the ground. What should I do? The flame is right here (...and so on). Now, is this your friend? Do you think you and your friend could help each other to try Drop and Roll?"

Those too shy to try, might help others; those unwilling to work alone, might work as a team.

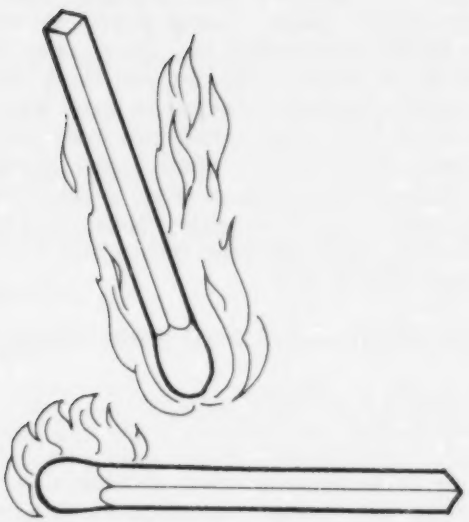
TEACHING TIPS:

Children need help in understanding that accidents happen very quickly, and not just to people who are being "naughty." Explain that something unexpected can happen even to those who are careful.

Use long fireplace matches to show that flames burn UP. If you prefer to avoid the use of matches, you could demonstrate the principle with crepe paper on a stick, and a hair dryer.

Figure 3.4

MATCH FLAME DEMONSTRATION



STOP, DROP, ROLL, AND COOL: SECOND ACTIVITY -

"COOL IT" SKITS (ROLE PLAYING)

FOCUS OF ACTIVITY:

Children practice putting cold water on imaginary burns.

SUGGESTED GROUPS/AGES:

Grades Kindergarten through 3rd.

SUGGESTED GROUP SIZE:

The participants are divided into small groups of up to six per instructor. Three group scenarios are described; others could be used.

APPROXIMATE TIME REQUIRED:

20 to 30 minutes, depending on the number of skits.

MATERIALS NEEDED:

Sink; make-believe faucet, bucket, or any water source, a campfire, a kitchen, and a barbecue. There may be make-believe or real marshmallows and sticks, and cookies. Other materials needed will be determined by the subject of additional skits and/or how elaborate the skits are to be.

CENTRAL IDEA:

"No matter how you get burned, cool it immediately with water." This will be news to most people, who treat their burns with ointments or butter. They should learn that butter and ointment actually seal in the heat of a burn, and attract and hold dirt to the wound, whereas water stops the skin's burning and cleans the area.

METHOD OF PRESENTATION:

For a group of first graders, the presentation (to the entire group) might be as follows:

> "We are going to learn something very important today: what to do if you get burned. Has anyone ever had a burn from a hot iron, or the stove, or a fire, or hot water, maybe? (They may give answers). It hurts, doesn't it? Well, we'd like to show you what to do so that if you get burned again you can help to make it better. It's very simple. If you get burned, put cold water on it right away. Got that? The reason it works is that even after you take away the iron or the fire, the skin keeps on burning. Cold water stops the skin's burning and cleans it. So if you get a burn, put cold water on it. Put it directly on your hand...on your leg...on your shoulder...on your back...on your tongue...on your arm. Even if you have to get your clothes wet, pour cold water on the burned place right away."

Have small groups act out some stories to show how to "Cool It" in different situations.

> "One story is about a CAMPFIRE. Let's have you four do the campfire story over here. Another is about making cookies in the KITCHEN...you four do that. The other is about a BARBECUE—cooking hot dogs outside. You four can do the barbecue story."
>
> (The groups divide.) Here's the CAMPFIRE. Here's where the water is. Let's pretend we're sitting around the campfire toasting marshmallows. (Hand out sticks. Save marshmallows for later.) We're all toasting marshmallows, and we're having so much fun that we forget about being careful. Unfortunately, each one of us gets a burn. First you. Pretend you are holding your long stick halfway up, too short. Your hand gets too close to the fire. You get a burn. What would you do? Show us. (Have child hold stick too short, pretend to get a burn, put cold water on it.) Good. Next person, you pretend that you have toasted your marshmallow and take a bite too soon. You burn your tongue. Quick. Get cold water. Stick your tongue right in it."

Continue with:

- Touching a hot stone near the fire
- Dropping a burning marshallow on your bare leg
- Getting bumped and having your elbow touch the fire

Meanwhile, the other two groups are performing similar skits:

IN THE KITCHEN: Here the children help an adult make cookies. Their situations might include:

- Touching a hot cookie tray
- Bumping your arm against the oven
- Resting your hand on a hot burner while opening the oven door
- Touching the over door
- Bumping the table and hot coffee spills on your arm
- Tasting a hot cookie and a chocolate chip burns your tongue

When you correct these problems, tell them to:

- Use a pot holder
- Reach slowly, carefully to the middle of the oven
- Watch both hands when opening the oven
- Avoid touching the oven dcor
- Move coffee to the middle of the table
- Wait until cookie cools before tasting

AT THE BARBECUE: The situations might be:

- Picking up a hot dog from grill with fingers
- Burning your mouth on a hot fork
- Having hot fat spit from the fire
- Touching charcoal you thought was cold
- Getting bumped and falling against the grill

When you correct these problems, tell them to:

- Use a fork to remove hot food;
- Stay clear of hot charcoal; let grownups cool the coals
- No horseplaying near the grill

After the groups have practiced their "Cool It" skits, they are ready to perform for the other children. As each group finishes its story, have the children stay in place.

> "Now we're going to show you how the campfire, kitchen, and barbecue people could have kept from getting burned in the first place. How could you hold your stick so you wouldn't burn your hand? And, what could this person do to keep from burning his or her mouth?"

Allow the whole group to respond to these and other questions. When they have solved all the issues, hand out the cookies or marshmallows.

TEACHING TIPS:

These skits are for young children and are intended to make one point clear: cool burns with water. If there is limited time, stay with the first part of the story, rather than getting into the prevention part. That could come at another time.

Mention to parents, perhaps at the conclusion of this activity, that any burn should receive medical attention, since burn wounds may worsen over a period of time. Children should be taught to tell their parents promptly about any burn they receive.

MODULE #4
WHAT FIREFIGHTERS WEAR

I. THEME

Physically, of course, the firefighter basically is no different than any other person. In order to survive in the hostile environment of a fire, the firefighter must be protected with specially designed and constructed clothing.

II. BACKGROUND

To the layman, firefighters' clothes are intriguing—bright colors, sturdy materials, and unidentifiable gizmos. The clothing invites questions and opens up discussion; firefighters' clothes entice children into imagining what it would be like to be a firefighter. The clothing exhibit should:

- Familiarize young children with the look of a fully outfitted firefighter. A special problem, which can have tragic consequences, occurs when children flee from an approaching firefighter. To young children, a firefighter might appear to be a stranger, a disciplinarian, or at worst—in air mask and helmet—a monster. Young children should be acquainted with firefighters in all of their uniforms, and taught that firefighters are helpers.

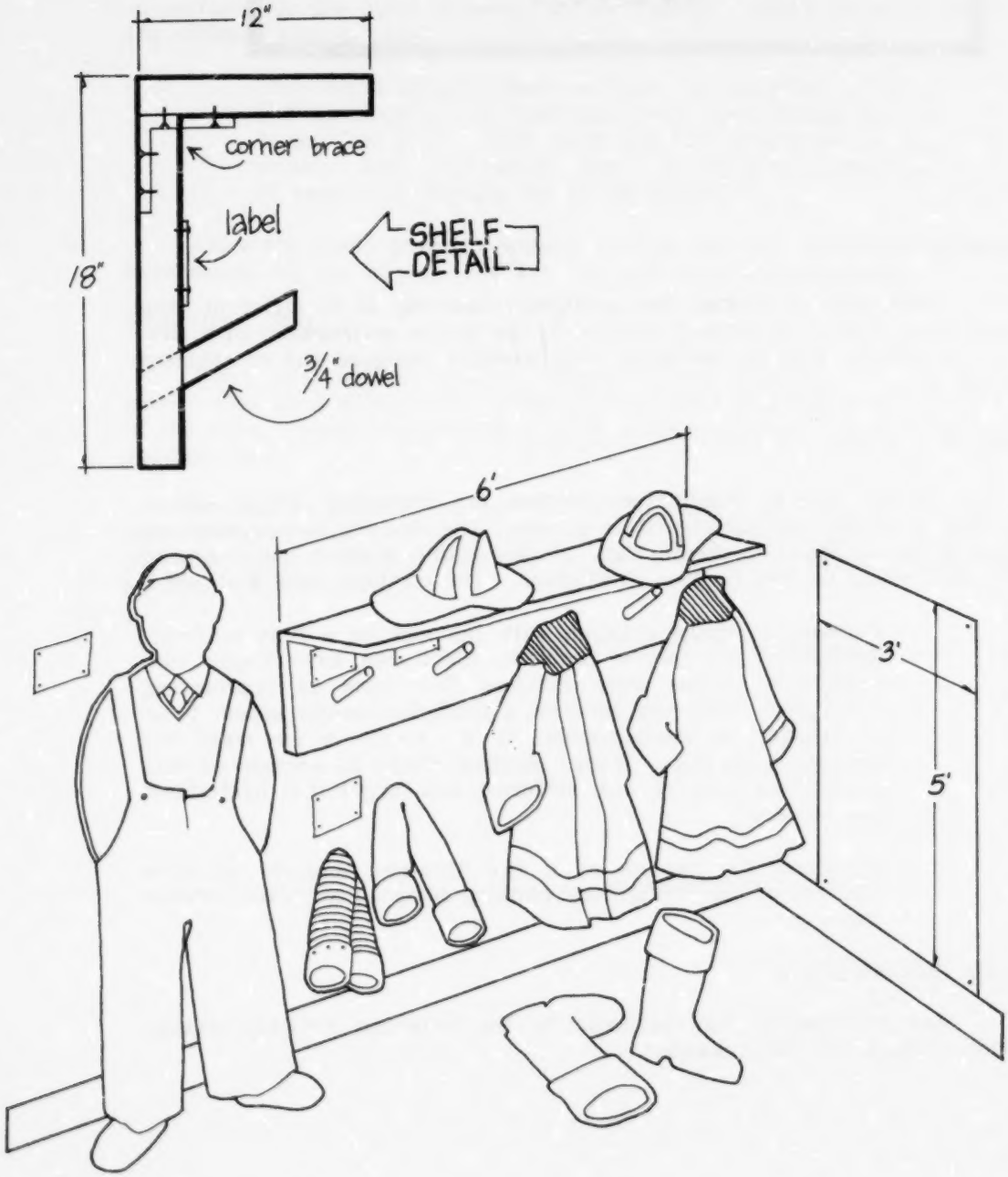
- Introduce the hazards of a fire through emphasis on those features of the firefighters' clothing designed to protect against them.

III. KEY INFORMATION

Key information may be found in the following Activity section, under "Questions and Answers."

Figure 4.1

FIREFIGHTER GEAR DISPLAY



WHAT FIREFIGHTERS WEAR: ACTIVITY -

CLOTHING TRY-ON

FOCUS OF ACTIVITY:

Children become acquainted with the different features of firefighters' clothing. They also may discuss the properties of smoke and fire, and some aspects of the firefighters' job.

SUGGESTED GROUPS/AGES:

Grades 3rd through 6th.

SUGGESTED GROUP SIZE:

12 to 15, depending on the number of articles of clothing and tags, and the amount of time available.

APPROXIMATE TIME REQUIRED:

20 to 40 minutes.

MATERIALS NEEDED:

Firefighters' clothing (coats, boots, helmets, air packs); tags with questions.

METHOD OF PRESENTATION:

Make several tags for each article of clothing. The questions on these tags give clues to the protective features of firefighters' hats, boots, coats, mittens, air masks, etc.

After showing the clothing and equipment, and explaining their design and construction features, divide the children into small groups and give each group one article of clothing and its related tags. The tags should not be treated as a quiz, because children are not expected to be familiar with firefighters' clothing prior to this activity.

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QUESTIONS AND ANSWERS

ABOUT BOOTS

Q. Why are there ridges and bumps on the bottom of the boot?

A. They help keep the boot from skidding and slipping on wet surfaces and on muddy, oily floors. There is a lot of water and spilled liquids around a fire.

Q. What are the handles on the boots for?

A. The firefighter needs to be able to pull the boots on quickly. Not a second can be wasted getting to a fire.

Q. Why does the firefighter need steel toes in the boot?

A. Heavy timbers may be falling in a burning building. Many sharp or heavy objects must be kicked aside.

Q. What are some of the dangers that firefighters face which make steel insoles necessary?

A. There are boards with nails sticking out, broken glass, twisted metal, and hot burning metal and wood. The boot also has a steel arch that helps keep feet from tiring when firefighters stand on ladder rungs.

Q. Why is the boot padded with foam?

A. The foam helps prevent cuts and bruises, and also acts as insulation against the heat of the fire and the cold of the water (and sometimes weather).

Q. Why does the boot have extra padding along the shin?

A. This helps prevent leg bruises caused by leaning against ladder rungs and by climbing.

QUESTIONS AND ANSWERS (continued)

Q. Should pants be worn on the inside or outside of the high boots? How about the short boots?

A. They should be worn inside the high boots. These boots protect all the way to the hip. Pants are worn outside the short boots—the firefighter would be wearing rugged, waterproof pants and wouldn't want water to run into the boot.

ABOUT THE COAT

Q. There are three layers in the firefighter's coat. Which layer is for warmth? Which is for protection from flame? Which layer is for toughness?

A. The inner layer is quilted for warmth. The middle layer has flame retardant in the cloth and a barrier to protect against vapors, such as hot steam. The outer layer is made of rugged cotton that resists tears and punctures.

Q. What do the white stripes do? Why are they on the coat?

A. The stripes reflect light even in darkened rooms. Firefighters work in very dark, smoky places. They must be seen by others so that they aren't injured by axes, hoses, or foam sprays; and so that they can be found if they are injured. Firefighters must know where others are working, if they are to get the job done.

Q. Why is the collar made of a different material?

A. The soft corduroy keeps the neck from getting chafed. This is a very tender place and a rough material would scrape the skin.

Q. Why does the coat have special buckles? How are they special?

A. The buckles hook quickly. They are extra-strong and will not come undone when a firefighter moves about. They allow movement without binding.

QUESTIONS AND ANSWERS (continued)

ABOUT THE HAT

Q. The firefighter's hat is tough and hard. What will this protect against?

A. As buildings burn, heavy timbers fall. Heavy equipment, ladders, and hoses swing through the air. The force of water from the hoses also pushes things around. And firefighters must break glass and wood to keep a fire from spreading. Any of these things could cause a firefighter to get hit on the head.

Q. The hats have chin straps. Why are they needed?

A. The same things which could bump the firefighter on the head also could knock the hat off: hoses swinging, timbers falling, and firefighters ducking into tight places.

Q. The brim is wide. Why does the widest part go in the back?

A. The brim keeps water and falling cinders away from the face and directs them down the widest part of the brim, away from the neck.

Q. The soft material inside the hat can be tucked up or pulled down. How is this useful?

A. When pulled down, it protects the ears against cold weather or the heat of the fire. When tucked inside the helmet, the material stays out of the way and provides extra cushioning.

Q. Some hats are painted white. Why?

A. Chiefs wear white hats so that the other firefighters can easily find them. The Chief answers questions and tells others what to do at a fire.

TEACHING TIPS:

Like the other exhibits, the clothing try-on works best when a fire educator leads the activity and explains the clothing to the visitors. Labels posted with the articles, however, will allow adults and older children to understand the exhibit without help.

SUGGESTED LABELS

WHAT FIREFIGHTERS WEAR

Firefighters wear special clothes to help protect them against smoke, heat, and flames.

As you try on these clothes, think about how they protect firefighters from danger.

You have probably seen firefighters in their blue uniforms. When they are fighting fires, however, they wear heavy coats and boots, and sometimes air masks, like the ones here.

BOOTS AND COATS

Firefighters use water to cool a fire's heat and put it out. The boots and raincoat keep the firefighter from becoming soaked.

GLOVES

Gloves protect a firefighter's hands from frostbite, burns, and cuts.

HELMET

The hard helmet prevents bumps on the head from falling objects. The wide brim keeps water and cinders from pouring down the back of the firefighter's neck.

PROTECTIVE BREATHING APPARATUS

Nobody can breathe the smoke and poisonous gases of a fire. Firefighters must wear masks and tanks of fresh air so that they can work in smoke.

NIGHT HITCH

If an alarm sounds while the firefighters are asleep, they can jump into this night hitch and slide down the pole to the fire truck in seconds.

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Give the groups time to study their articles of clothing and to consider the questions about them. Talk individually with each child and/or group and agree on the correct answer to each question. Then reconvene the entire group and have one child from each small group read the questions aloud. The child, perhaps with your help, can handle guesses and comments from the others. Finally, he or she can give the correct explanation and demonstrate the article of clothing.

A lively way to finish this activity is with a relay race. One member of each small group puts on coat, boots, hat, and mittens; tromps to an imaginary "truck" and back; then transfers the entire outfit to the next team member. (Remember to have the children remove their own shoes first.)

Figure 4.2
CHILD IN TURNOUT GEAR

MODULE #5
QUIZ

I. THEME

School children—and even many adults—shudder at the thought of having to take a test. But the "tests" in this display are more like games: a box that lights up when pairs of pictures are correctly matched, a bingo game, and a jigsaw puzzle.

The person playing the games learns the correct responses, either by trial and error or through accompanying discussion. Once mastered, the quizes can be repeated, reinforcing the learning process, while the appropriate fire safety information is reiterated.

II. BACKGROUND

The items for the Light-Up Quiz Board summarize other sections of the exhibit—general questions about cooking, cooling burns, exit drills, what a firefighter looks like. It also might be useful to make several specialized quizes: one suitable for young children, one specifically about electricity, one on escaping a house, and the like.

III. KEY INFORMATION

Tests are helpful for several reasons:

- Tests let people know how much they have learned and remembered.
- Tests not only highlight important points, but make the correct responses automatic—if the tests are designed so that the repetition is enjoyable and participants continue to "play" even after the right answers have been elicited.

IV. CONSTRUCTION

The paired responses usually match up in a "first-this,-then-that" format. For example, one of the pictures on the left side ("question" side) of the box might be of a pan of grease in flames on a kitchen stove. The corresponding picture (on the right, or "answer," side) would be of a lid to cover the pan.

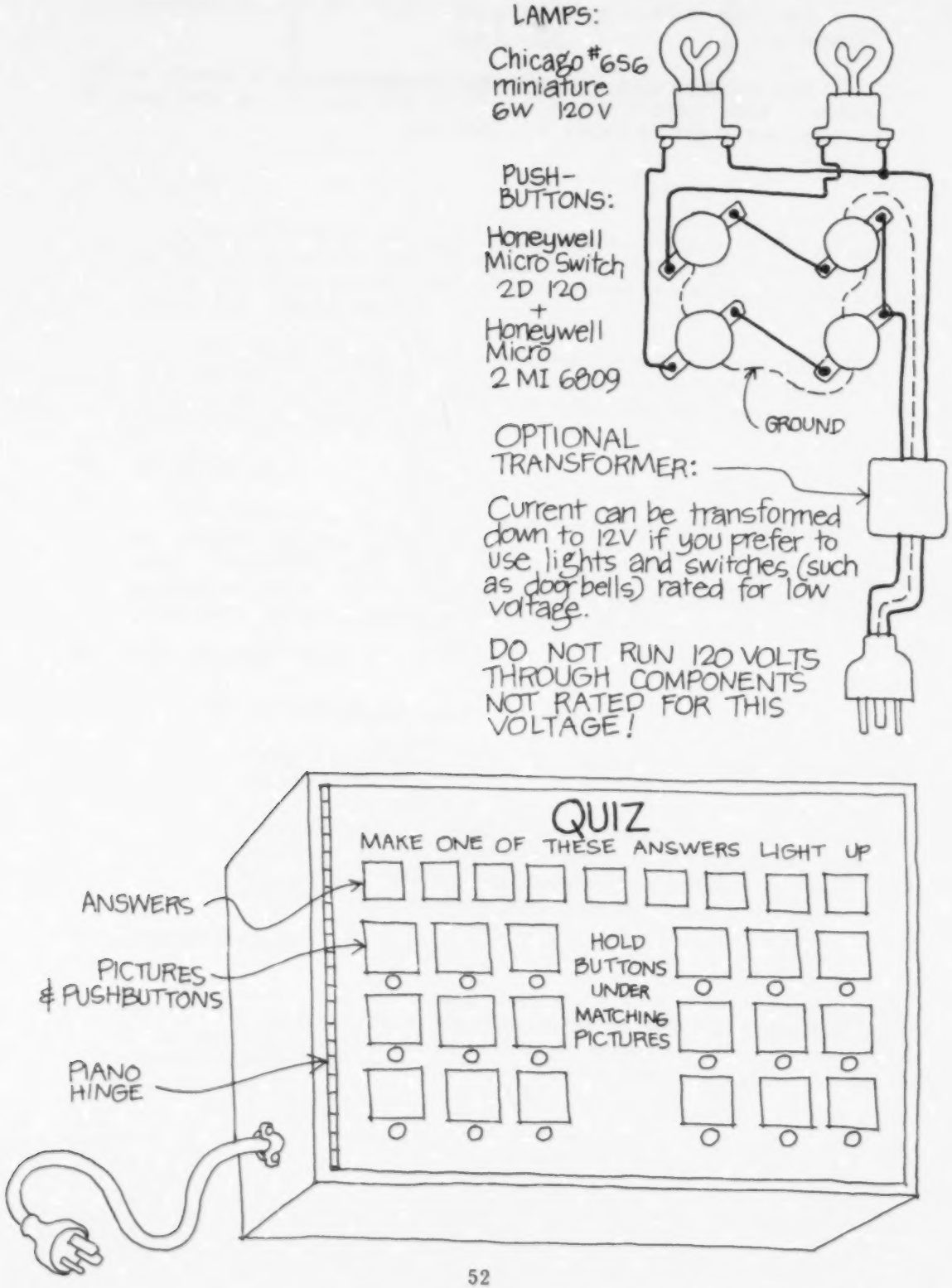
The matching pairs need not all be pictures. Written questions and answers also can be used, either alone or mixed in with the pictures. Pictures, however, add interest and attract attention to the display.

For older children and adults, don't make the correct responses too obvious.

You can make the Light-Up Quiz Board as big and elaborate as you choose. Basic construction details for a quiz board having nine pairs of pictures are shown in Figure 5.1, following.

Figure 5.1

LIGHT-UP QUIZ BOARD


LAMPS:
Chicago #656 miniature 6W 120V
PUSH-BUTTONS:
Honeywell Micro Switch 2D 120
+
Honeywell Micro 2 MI 6809
GROUND
OPTIONAL TRANSFORMER:
Current can be transformed down to 12V if you prefer to use lights and switches (such as doorbells) rated for low voltage.
DO NOT RUN 120 VOLTS THROUGH COMPONENTS NOT RATED FOR THIS VOLTAGE!
QUIZ
MAKE ONE OF THESE ANSWERS LIGHT UP
ANSWERS
PICTURES & PUSHBUTTONS
PIANO HINGE
HOLD BUTTONS UNDER MATCHING PICTURES

QUIZ: FIRST ACTIVITY -

FIRE SAFETY BINGO

FOCUS OF ACTIVITY:

Children become increasingly familiar with the ideas presented in the Light-Up Quiz Board. The same pairs of matching pictures used in the Quiz Board can be used in making the Bingo game (other appropriate paired pictures also can be used, of course).

SUGGESTED GROUPS/AGES:

Six to 12 years, or mixed ages.

SUGGESTED GROUP SIZE:

As many players as you have boards.

APPROXIMATE TIME REQUIRED:

Five to 20 minutes.

MATERIALS NEEDED:

Four or five complete sets of paired pictures will be needed to make the bingo boards, drawing cards, and bingo display (see below for directions). Also needed: cardboard, glue, clear adhesive-backed paper, paying tokens (bottle caps, poker chips, cardboard circles, etc.)

For each bingo board, glue any nine pictures to a piece of cardboard, in a tic-tac-toe pattern. Vary the pictures so that no two boards have the same assortment. A board may have both of two matching pictures (for example, the flaming pan on the stove and the can of baking soda). Cover boards with clear adhesive-backed paper.

To make the drawing cards, glue each of the 18 pictures to a separate piece of cardboard. Cover with clear adhesive-backed paper.

To make the display, glue one complete set of the nine matched pairs to cardboard. Cover.

METHOD OF PRESENTATION:

First show the correctly matched pairs of pictures in the display set. Ask the group, "Do you know why these two pictures go together?" Discuss each situation thoroughly.

Then tell them that they are going to play a game using these pictures.

Pass out the boards and tokens. The display set may be left up for reference.

Shuffle the drawing cards. Draw one and ask if any one has the other, paired, picture which tells the rest of the story. If so, the paired picture should be covered with a token. Explain that the "partner picture" is to be covered, not the same picture. (Younger children may have some trouble with this concept, especially since in ordinary bingo games it is the "same" picture or number that is covered.)

When someone gets three tokens in a row—up and down, across, or diagonally—he or she is the winner. Children usually enjoy playing the game many times in succession, either keeping the same cards or swapping them with other players. Older children may want to play two or more cards at a time.

QUIZ: SECOND ACTIVITY -

PUZZLE

FOCUS OF ACTIVITY:

Simple jigsaw puzzles for young children can be made using paired pictures of things that go together. The same pictures used in the Light Up Quiz Board also can be used for the puzzles. Possible combinations include:

- Flaming clothes—drop and roll
- Burned hand—cool with water
- Firefighter's mask—smoke
- Smoke—person crawling

From the puzzles, young children learn the association between a pictured scene and its "mate."

SUGGESTED GROUPS/AGES:

Four to six years old.

SUGGESTED GROUP SIZE:

An individual activity.

APPROXIMATE TIME REQUIRED:

Less than five minutes.

MATERIALS NEEDED:

Four pairs of matching pictures (each three inches square), two nine inch squares of wood, glue, nails.

Mark and trim one piece of wood as shown in Figure 5.2, keeping the little squares. Glue and nail the one-inch strips onto the second nine-inch square, as a frame. Hint: Remember where each strip came from and put it in the same relative position on the second board; this will assure that the puzzle pieces fit exactly. Now you have a board with a frame, making a grid pattern.

Glue half of the paired pictures to the squares inside of the grid. Glue each of the four matching pictures to one of the three inch squares. Cut a notch off of one corner of each little square, varying the shape of the notch,

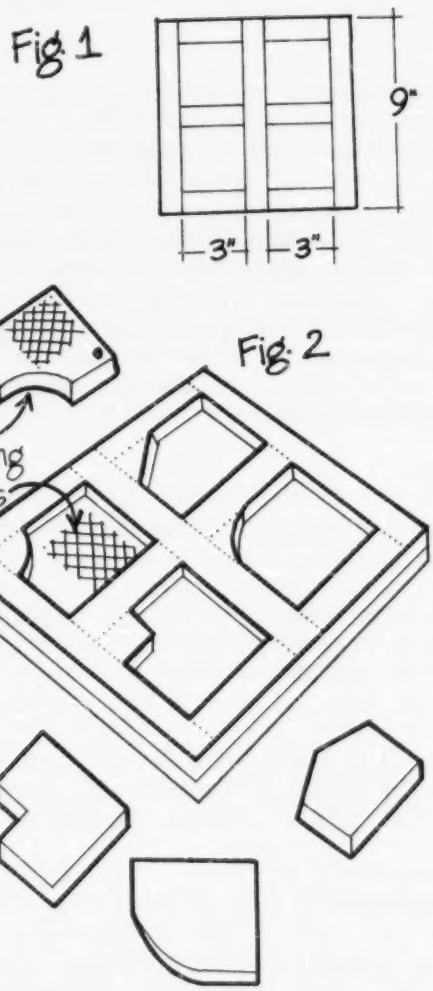
and glue these pieces into the corresponding corners of the grid. This will make the puzzle self-correcting. Sand the small squares so that they can be moved easily in and out of their spaces.

METHOD OF PRESENTATION:

Treat each pair of pictures as a two-part story. After you have narrated the story, have the child tell it back to you. Then separate the puzzle pieces and show how the puzzle goes together. Mix the pieces and let the child take it from there.

Figure 5.2

PUZZLE



MODULE #6
THE FIREHOUSE

I. THEME

The operation of every firehouse depends on cooperation from people in the community. This cooperation ranges from learning how to use fire alarms and taking responsibility for public property such as hydrants, to more involved fire prevention and detection efforts. In many communities, the people are the fire department. They volunteer to fight the fires, they raise funds for equipment, and they are the fire safety instructors. In presenting a glimpse of the firefighter's environment and tools, you can foster greater understanding of and respect for the firefighter's role. You also will increase awareness of the fire department's historical role as a social and civic institution.

II. BACKGROUND

In any group of young visitors, there might be a future fire educator or a future firefighter; a future false alarm puller; or a future firesetter. There may be one who will be influenced one way or another by the lure of the exhibit. The presentation, then, should be well-balanced, showing the glamorous, flashing equipment and heroic nature of the job; as well as the routine and problematic aspects of it: hard work, bookkeeping, studying, and the loss and pain of fire victims.

The Children's Museum of Boston exhibits a glass-covered case of artifacts from the Hopkinton (Mass.) Central Fire Station. The variety of objects from this small firehouse makes an engaging and informative display.

III. KEY INFORMATION

Whether a volunteer or paid service, a fire department is a town's first response to a vast assortment of emergency situations. The fire department also may be one of the town's oldest continuing civic organizations and the center of some of its busiest social life. In many places, traditional fire department social activities are enjoyed by generations of townspeople.

Memorabilia of a firehouse tell its proud history of professional excellence and spirited teamwork. The display items also can convey educational messages, such as the need for home smoke detectors.

IV. CHOOSING OBJECTS FOR DISPLAY

The essence of the display is visual attraction. Whatever is displayed should be easy to see, well identified, and attractively arranged. Articles can be rotated weekly or monthly to vary the display. Items for exhibit could include:

- Series of photos from different periods. Pick the photos for contrast: people love to compare "then" with "now." Keep the selection small.

- The oldest piece of equipment or memorabilia: a belt buckle, nozzle, or nail from a burned house. It doesn't matter what you choose, as long as it has a tag identifying it and tying it to another era.

- A handsome object, no matter how old or new. Choose something of excellent design or craftsmanship.

- Pairs or groups of things. Hats from different periods, mittens and gloves used for different tasks.

- Awards earned in educational programs, for charitable work, for heroism.

- Old newspaper story, perhaps paired with a recent one, which gives details of fire prevention techniques, firefighting, or a social event.

- Behind-the-scenes or "homelife" scenes of the firehouse: pictures of people reading, working on equipment, cooking; pictures of Dalmation puppies born at the firehouse.

- Souvenir from a party: menus, invitations, photos of people dressed up or in costume, statistics on the number of hot dogs consumed at a firehouse sponsored picnic. These give a light touch and suggest the subject of fund-raising.

- Old bookkeeping records, perhaps paired with new ones. On one level, people like to see how prices have risen; how much people were paid at the turn of the century; and charges for outmoded items, such as stabling horses or purchasing wagons. On another level, these documents demonstrate the Fire Department's accountability to the community and the necessity of keeping complete and accurate records.

The key to putting together an exhibit of this nature is to highlight objects by carefully selecting a small number of them. If your display is too cluttered, you risk losing people's interest. Resist the temptation to include too much, and you will achieve a better-looking and more effective exhibit.

V. ALTERNATIVE DISPLAY: TOY FIRETRUCKS

Another kind of exhibit concentrates on one type of item. These items are selected not for their individual effect, but for their sheer number. The Children's Museum, for example, displayed a wall full of toy firetrucks.

To make a display of toy trucks, you can borrow from a museum, advertise a "model firetruck display month" and have people bring them in, or fill out an exhibit of a few models with a collection of pictures. Just two or three trucks can open up a discussion of technological changes in fire equipment. A display of this type is appealing to all ages.

Use cards to identify the donor or donors of the models; for example:

> FIRE TRUCKS from the
>
> collection of
>
> John and Mary Smith,
>
> Chicago, Illinois

Other cards can serve to introduce the display and to give brief information about unusual models.

THE FIREHOUSE: ACTIVITY -

MAKING TOY FIRETRUCKS

FOCUS OF ACTIVITY:

A display is static and may not hold the attention of young children. Participation is the key—in this activity, children create their own display.

SUGGESTED GROUPS/AGES:

Grades Kindergarten through 3rd.

SUGGESTED GROUP SIZE:

As long as sufficient materials, work space, and supervision are provided, any number may participate.

APPROXIMATE TIME REQUIRED:

20 to 40 minutes.

MATERIALS NEEDED:

Small cardboard boxes, wooden picnic forks, cardboard circles, buttons, string, drinking straws, sponges, plastic packaging materials, rubber bands, glue, acrylic or watercolor paints, scissors.

METHOD OF PRESENTATION:

Using red boxes for the bodies—with wooden forks, cardboard circles, plastic drinking straws, sponges, plastic packaging materials, rubber bands, and other scrap materials—young children can construct their own custom-built firetrucks. As they work, the person in charge can discuss with them what a firetruck does, the equipment it carries, and why it makes so much noise on the way to a fire.

TEACHING TIPS:

After the firetrucks are made, be sure to display them and draw attention to the creators. This reinforces the activity and may stimulate the children to further investigation of the fire service and fire safety.

SUGGESTED DISPLAY ITEMS

ARTICLE	TAG
APRON—fluffy organdy, half apron	Bad news if broiler pan catches fire.
APRON—full apron with frilly front	Imagine this one leaning over a hot stove!
APRON—sturdy material, no frills	Keep loose clothing away from heat and flames. When you wear an apron, roll your sleeves up, too
ASHTRAY—glass with indentations along outer edge	Forgotten cigarettes burn down and fall off the edge. This is the cause of many serious fires in homes.
ASHTRAY—small sand-filled base with wire "perch" in the middle of the dish	Stable base; more likely to keep cigarette inside as it burns down. Must be emptied often.
ASHTRAY—wide ashtray with large island "perch" in the middle for holding cigarettes	Cigarettes which burn down fall into the ashtray—definitely safest.
BATHROBE—long, lightweight, fancy; with feathered cuffs	Floppy sleeves, flowing style, fuzzy lightweight material. All are hazardous around stoves, fireplaces, cigarettes, and space heaters.
BATHROBE—knee length, short or 3/4 length sleeves	You won't trip in this one, or get the sleeves in the fire.
CANDLE HOLDER—small with no dish	Drippy.
CANDLE HOLDER—small with no base	Tippy.
CANDLE HOLDER—with a wide base and a collar	Stable.
GAS CAN—red plastic	The container is easily damaged and spills easily. Gasoline vapor is very flammable. The invisible vapors can travel great distances to contact a flame.

SUGGESTED DISPLAY ITEMS (continued)

ARTICLE	TAG
GAS CAN—metal with spring-closing	Spring-closing spout prevents vapor from leaving can. A safer choice.
(Additional information card)	Gasoline is so flammable it should be used ONLY for motor fuel.
LIGHTER—Zippo-style	Sometimes hard for the elderly to light. The lid gets hot. The lighter does not shut off automatically. Refueling can cause spills.
LIGHTER—novelty table-style	This even looks like a toy and is often left where children can play with it. Lighters are dangerous and should be put in a safe place.
LIGHTER—disposable butane	These are easy for the elderly to light, and they shut off automatically. No refueling is necessary.
MASK—made from paper bag	Paper masks burn easily. Unless they fit well, they also may impair a child's vision.
MASK—using theatrical make-up	A safer disguise, with infinite variations.
MATCHES—"strike anywhere"	Handy for camping. Keep them in air-tight, mouse-proof, child-proof container.
MATCHES—safety-type (box or book)	They light when struck against a special surface. Better for homes with children. Be sure to store them out of reach of small children.
PAJAMAS—with long label of washing instructions	These pajamas are treated with a flame resistant chemical. Be careful not to launder out the chemical with soap, non-phosphate detergent, fabric softener, or heat. Wash these in detergent, following label directions.

SUGGESTED DISPLAY ITEMS (continued)

ARTICLE	TAG
PAJAMAS—made of Mod-acrylic	Also flame resistant, but easier to launder. Follow directions.
(Additional information card)	The clothing industry is continually turning out new materials which are inherently flame resistant (such as Mod-acrylic). Look for others to come.
SWEATSHIRT (burned) and JACKET (cotton)	Cotton burns quickly.
SWEATER (wool) and JACKET (leather)	A safer combination: wool and leather.

MODULE #7
FIRE IN THE NEWS

I. THEME

Hardly a day goes by without a fire story on radio or television news, followed by an article in the newspaper. Fires in familiar towns or buildings, involving local people, are interesting to the public. The natural curiosity about fire stories makes it easy to use news articles to point out lessons to be learned from the events, to identify examples of helpful or ineffectual behavior, and to explain how fires start.

A newspaper clipping about fire attracts attention: a collection of fire stories displayed together has an even greater impact. Certain recurring messages soon become apparent in this type of display: the mistakes people make—running back and forth looking for each other, jumping from windows, overstuffing fireplaces, and storing flammable materials near pilot lights—become horribly familiar. It is striking to realize that there is almost always something simple that someone could have done to prevent the fire.

Also, a display of news articles about a family which was saved because of a smoke detector, a child who dropped and rolled, and the like, emphasize the effectiveness of educational programs.

II. BACKGROUND

The exhibit is a combination chalkboard, bulletin board, and scrapbook. Newspaper articles, accompanied by appropriate brief comments, are displayed. The articles can be changed periodically and the older ones transferred to a scrapbook.

III. KEY INFORMATION

The exhibit's final form and content will depend upon the availability of materials, and local needs and preferences.

IV. CONSTRUCTION

The original "Fire in the News" exhibit was built at the Children's Museum with a homosote bulletin board over plywood, which had been painted with blackboard (chalkboard) paint. This was protected by Plexiglass because of the large number of visitors to the Museum. The scrapbook was a portfolio made of black paper and looseleaf acetate pages, bolted to a wooden lectern. Although the portfolio was handsome and large enough to accommodate full-page clippings, it had certain disadvantages. The acetate pages eventually tore (after rough and heavy use), and in order to write on the black paper, Museum staff had to painstakingly paint the comments with white ink.

As an alternative, a smaller display unit might be built for a traveling exhibit, perhaps with a folding bulletin board/blackboard and a small lectern to hold up the scrapbook. A ready-made scrapbook certainly would do; as would a wallpaper sample book, with the clippings mounted on construction paper.

V. ALTERNATIVE DISPLAY: FIRE/SAFETY HAZARDS

An impressive display of hazards which have caused fires can be assembled. Like the newspaper clippings display, this exhibit can evolve and change as people contribute additional objects. Unlike the "required reading" necessitated by the clippings, the story behind the objects can be grasped immediately. In fact, objects invite investigation: a can of hair spray draws more attention than the words "hair spray."

Combine an actual burned wig, for example, with a can of hair spray and a newspaper clipping or excerpts from a fire report on this fire hazard. Short headlines or captions, such as "Fire Backstage!", increase curiosity and evoke questions.

Figure 7.1

FIRE NEWS EXHIBIT

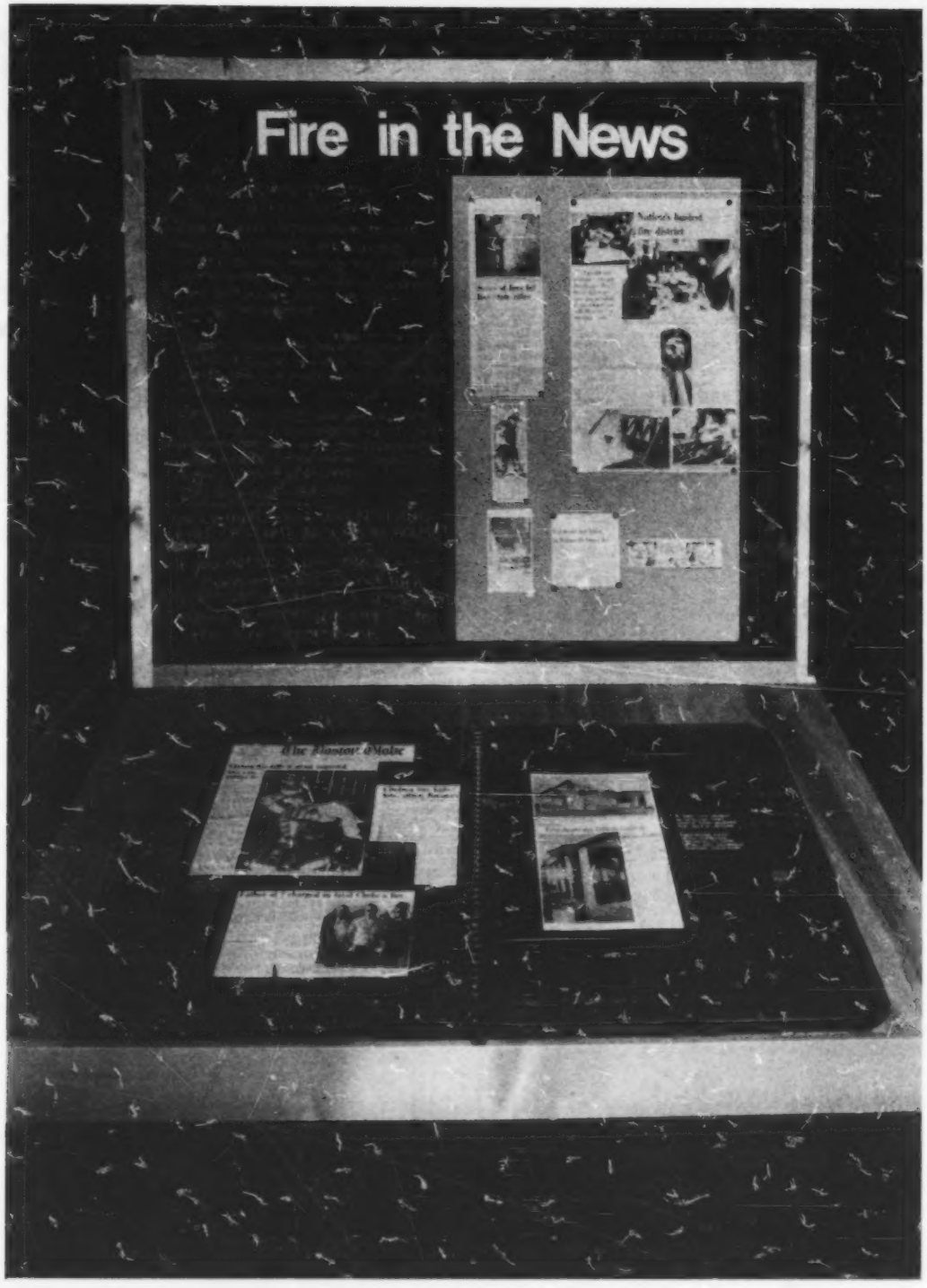


Figure 7.2

NEWS EXHIBIT CONSTRUCTION

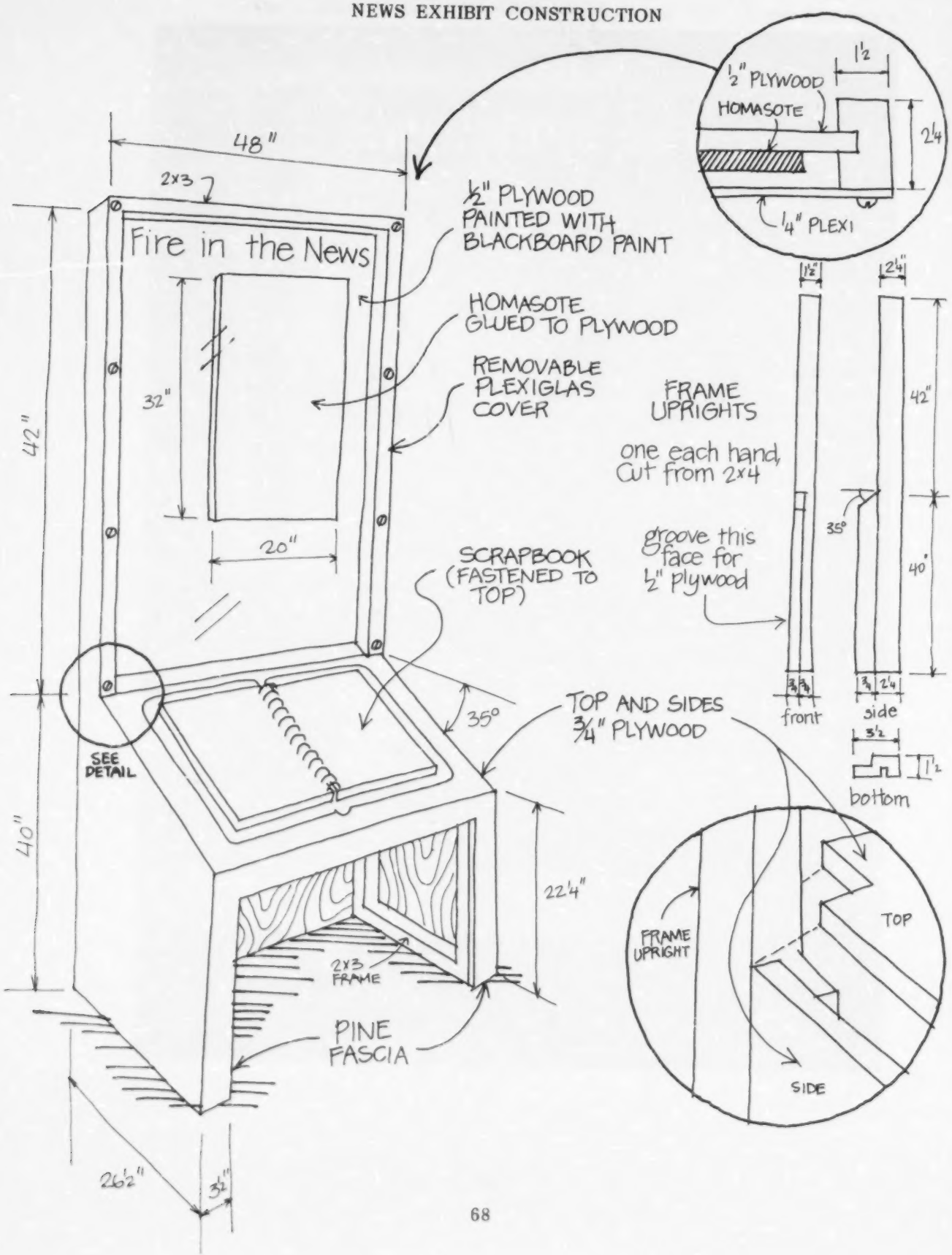
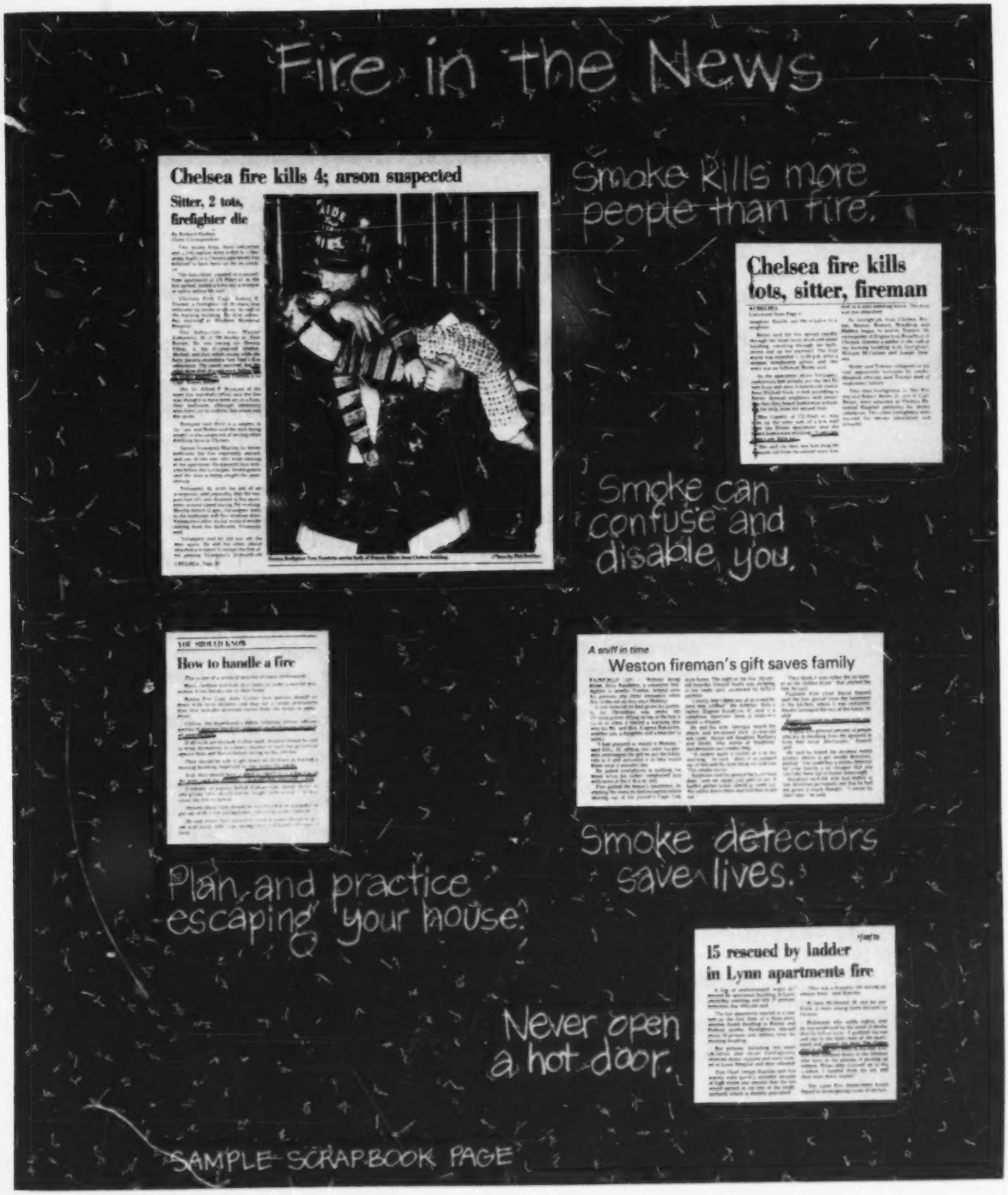


Figure 7.3

FIRE NEWS LAYOUT


Fire in the News
Chelsea fire kills 4; arson suspected
Sitter, 2 tots, firefighter die
Smoke kills more people than fire.
Chelsea fire kills tots, sitter, fireman
Smoke can confuse and disable you.
How to handle a fire
A sniff in time
Weston fireman's gift saves family
Smoke detectors save lives.
Plan and practice escaping your house.
15 rescued by ladder in Lynn apartments fire
Never open a hot door.
SAMPLE SCRAPBOOK PAGE

MODULE #8
"SAFERWAY COMPANY" STOREFRONT

I. THEME

The Storefront is an exhibit designed to show people that they can make safer choices when they shop for clothing, household articles, electrical appliances, and other consumer goods.

The products displayed in the Storefront can be selected to reflect the community's particular needs. Which products are being misused? What hazards need to be identified and highlighted? The display can explain how unsafe products cause fires, as well as showing improved and safer products.

II. BACKGROUND

A selection of articles is set up in the "Saferway Company's" shop windows, with tags identifying key features. Shoppers are:

- Encouraged to consider safety factors when choosing products
- Informed about the hazardous features of some products by comparing them with others, and by displays such as tippy candlesticks actually tipped over onto a burned placemat
- Alerted to their own possibly hazardous behavior through the displays

The Storefront also can show people how to meet their real-life shopping needs in safer ways. This is important, for it does little good to point out, for instance, that paper bag halloween masks are hazardous unless a better alternative is given (for example, a recommendation to use theatrical make-up; telling where it can be purchased, and giving hints on applying and removing it).

III. KEY INFORMATION

The main idea is that shoppers often have a choice between products which may be more of less fire safe. The shopper is encouraged to learn to distinguish between hazardous and safe products, and to make a habit of choosing the safer ones. Some points to emphasize include:

- Careful shoppers often can choose products which make fire safety easier.

- Some products are inherently safer than others. For example, an ashtray with an island in the middle to keep cigarettes from falling off the edge is safer than other types.

- Some products are easier to maintain than others. All children's sleepwear must be flame-retardant, but fabrics such as Mod-acrylic do not require the careful washing that chemically treated fabrics need.

- Some products are safer in certain situations. "Strike-anywhere" matches are great for camping, but safety matches are better in homes with children.

IV. CONSTRUCTION

The following illustrations (Figures 8.1 and 8.2) show a fairly elaborate construction, requiring some cabinet-making experience and a table saw. If the store is to be set up permanently, perhaps with interchangeable displays, then a structure such as this is worth the effort.

V. ALTERNATIVE DISPLAYS

"Saferway Company" also can be displayed in a peddler's cart or in an exhibit case, arranged to give the appearance of a shop window. Another approach is to set up a "bargain table," with each article tagged. People seem able to imagine a shop with just a few props: the tags, the positioning of the products, and some "advertising." Someone with a flair for the dramatic can draw a crowd with a mock auction:

> "What am I bid for one of these terrific gasoline cans? This one's plastic, easily damaged, get some great spills out of the nozzle; sorry, no cap for it, but you could stuff an old rag in here. How about this one, with a self-closing spout, made of heavy duty metal? Who wants the first one? No? Listen, you're missing out on a good chance to start a fire."

A cooperative department store or specialty shop in your community also can be used to house your exhibit. Especially during Fire Prevention Week, local businesses might be interested in participating. Business leaders are likely to be knowledgeable about the quality of the products they sell. They may help to select products for your exhibit, and perhaps loan some for the display. Working with them from the beginning of a "Saferway Company" project should facilitate product acquisition, and help you keep up-to-date on new items coming onto the market. It will take

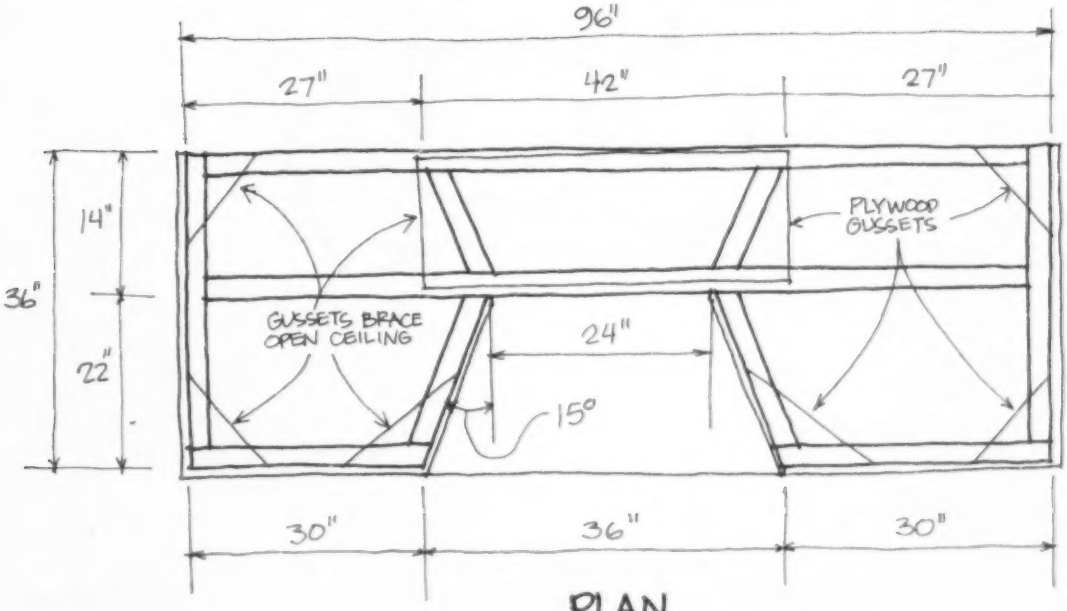
Figure 8.1

"SAFERWAY COMPANY" STOREFRONT

Figure 8.2

"SAFERWAY COMPANY" CONSTRUCTION

FRONT ELEVATION



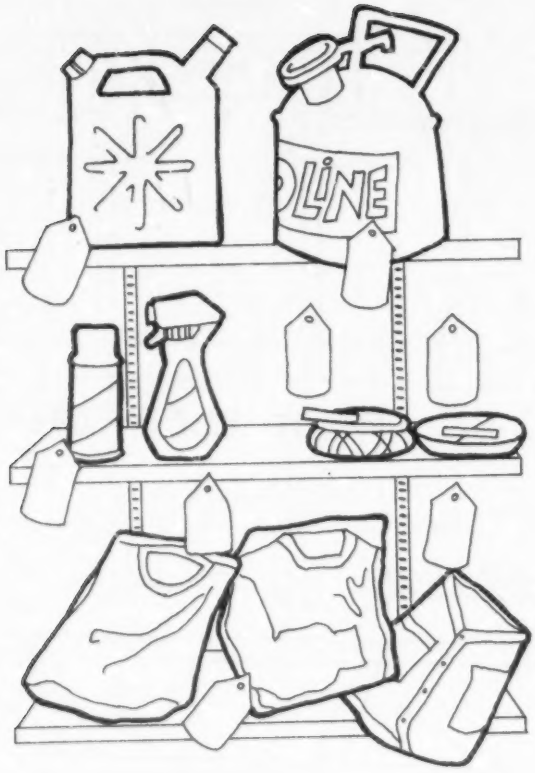
PLAN

Showing floor and ceiling framing

NOT TO SCALE

Figure 8.3

CONSUMER PRODUCTS DISPLAY



real diplomacy, however, to work "unsafe products" into shopkeepers' displays!

Many of the "unsafe" products may be obtained from rummage sales, discount stores, and personal possessions. Request donations only of those products you plan to display as "better" choices.

MODULE #9
SMOKE DETECTORS

I. THEME

Smoke detectors provide an early warning when fire strikes, allowing people time to escape. Smoke detectors are readily available, relatively inexpensive, and easy to install and maintain. This exhibit also can be used to emphasize the importance of preplanning escape routes from the home and of actually practicing evacuation.

II. BACKGROUND

This exhibit is particularly suited for junior high-school and high-school students, as well as adults. Several display ideas are suggested in the Activities section; others may be added according to local needs and ideas.

With visitor participation, this exhibit becomes more than "show and tell"—creating interest and actually stimulating the purchase and installation of smoke detectors.

III. KEY INFORMATION

Residential smoke detectors usually are of either the ionization- or the photoelectric-type. Some units combine both technologies.

The ionization-type detector uses a small particle of radioactive material which electrically charges the air inside the detector's camber, making it possible for an electric current to flow through the circuit. When smoke enters the chambers, it interrupts this electrical flow, and the smoke detector sounds the alarm. Ionization-type detectors respond well to heated smoke particles (visible and invisible) from flaming fires. Ionization detectors give off no more radiation than an illuminated watch dial or an airplane flight.

The photoelectric-type detector uses a beam of light, a light sensing device, and a dark chamber. These components are so arranged that when smoke enters the darkened chamber, the light is scattered by the smoke particles. The sensor detects some of the stray light, and sounds the alarm. Photoelectric-type detectors respond well to colder, thicker smoke from slow, smoldering, smoky fires which start at a distance from the detector.

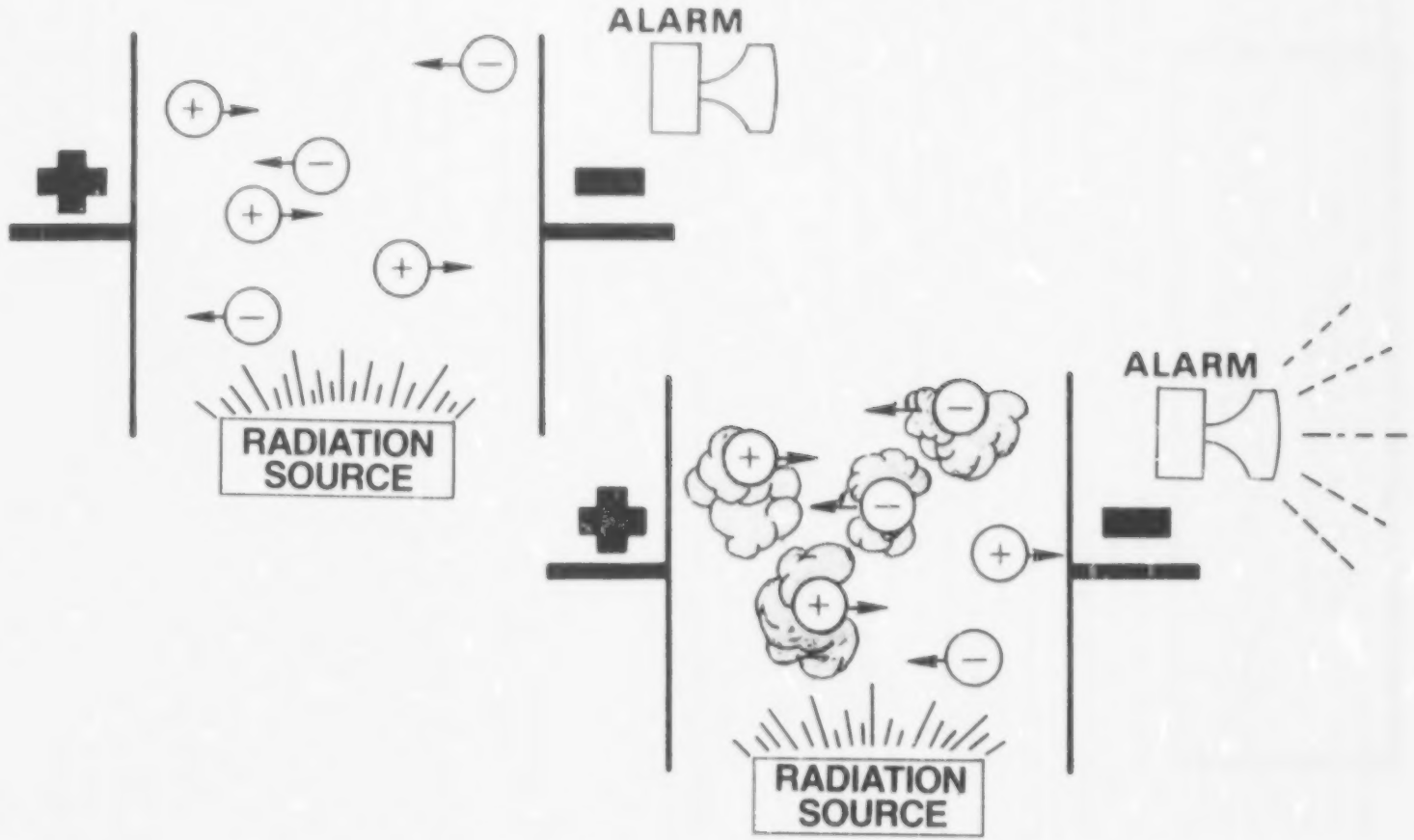
Although each type of smoke detector has certain advantages and disadvantages, a good detector of either type obviously will provide better protection than none at all. For maximum reliability and safety, the detector should conform to the Underwriter's Laboratories Performance Test No. 217, revised October 1978, and be installed and maintained according to the manufacturer's instructions. (A copy of UL Test No. 217 can be obtained by writing Underwriters Laboratories, 333 Pfingsten Road, Northbrook, IL 60062.)

Since most fatal home fires occur at night while family members are asleep, the best location for a single smoke detector is in the hallway just outside the main bedroom area. This assures an alarm at the first sign of smoke accumulation near the bedroom area. In homes having more than one sleeping area, additional detectors should be installed.

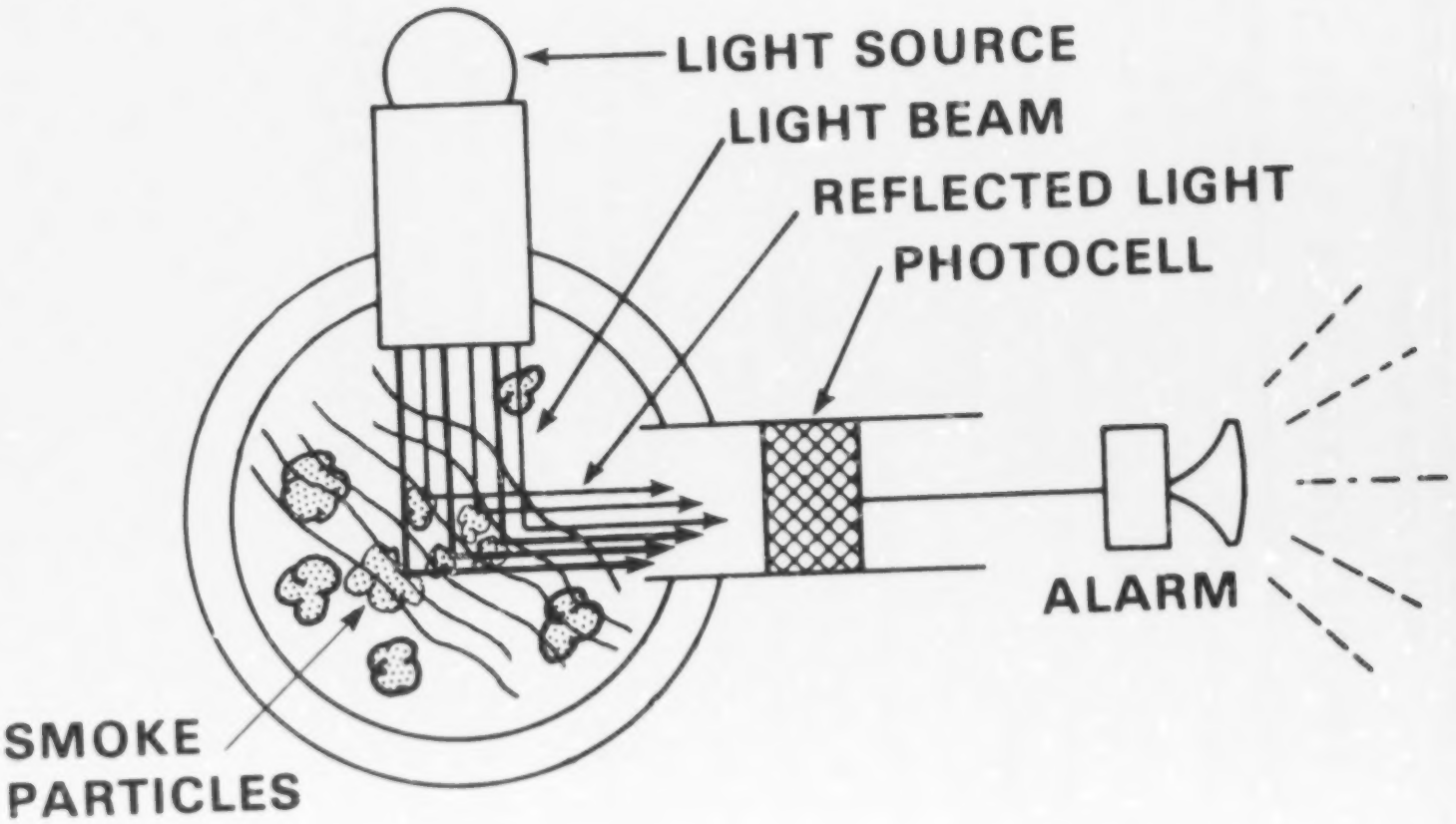
To prevent false alarms, avoid placing detectors near an oil burner or in the kitchen where normal food preparation could trigger the alarm. Other causes of false alarms are dust accumulation, high wind velocity, heavy pipe or cigar smoke, and certain aerosol sprays. Detectors should not be installed in garages, attics, or other locations where ambient temperatures exceed 100°F. From time to time, the detector openings should be cleaned with a vacuum cleaner hose to remove dust. Note that this may momentarily trigger the alarm.

Maintaining and testing smoke detectors are critical to assuring their operation when you need them. Follow the manufacturer's instructions.

IONIZATION SMOKE DETECTOR



PHOTOELECTRIC SMOKE DETECTORS



SMOKE DETECTORS: FIRST ACTIVITY -

SMOKE DETECTOR DISPLAY

FOCUS OF ACTIVITY:

Participants learn how smoke detectors work, what they look like, and which kinds are suitable for their needs.

SUGGESTED GROUPS/AGES:

Grades 6th to adult

SUGGESTED GROUP SIZE:

Continuous open display.

APPROXIMATE TIME REQUIRED:

10 to 20 minutes.

MATERIALS NEEDED:

Several types of smoke detectors (ionization and photoelectric, both battery- and household current-powered), newspaper articles in support of smoke detectors, construction paper, tags, marking pens.

METHOD OF PRESENTATION:

This display can be set up by itself, or used in the "Saferway Company" or "Fire in the News" exhibits.

Use the information found in the Key Information section to set up display items for viewing. Following are examples of informational cards which may be placed by or attached to the smoke detectors and their components (such as batteries, horns, circuit boards):

DISPLAY CARDS

Smoke detectors may be operated by either of two types of power: battery and house-current. Underwriters Laboratories (UL) requires that battery-operated units have a low battery signal that goes off before the battery fails. Manufacturers suggest testing a smoke detector each week.

Approved plug-in detectors have a power cord at least six feet long. When the cord is carrying AC power, its length cannot exceed nine feet. Plug-in detectors should be secured in the electrical outlet, usually with a metal clip. This device prevents accidential removal of the plug.

Electrically wired-in detectors should be installed by a professional electrician. UL approved detectors have wiring or leads which connect to the home's electrical system and meet national electrical code requirements.

An additional feature of some detectors is interconnection—when one detector sounds, other detectors in the home also are triggered to sound their alarms.

The first important step in protecting your family against fire is to install a smoke detector. The second step is to properly maintain and test the detector, following the manufacturer's instructions. Finally, a home escape plan is essential. In a typical fire situation, your family may have only three to seven minutes to escape. Careful planning and practice drills save lives.

DISPLAY CARDS (continued)

To make escape planning effective:

- Each family member should be familiar with exits from all parts of the home. Practice and review escape routes periodically.
- If smoke blocks the normal exit from a room, use your alternate planned route.
- A prearranged meeting point outside of the house prevents family members from re-entering the house to look for each other. Remember to call the fire department from a neighbor's home or fire department alarm box.

INSIDE A SMOKE DETECTOR

This cutaway of a photoelectric-type smoke detector shows how smoke scatters the red light beam so that a sensor can "see" the light and sound the alarm.

Your eye is a kind of light sensor. Could you see the light beam if there were no smoke?

SMOKE DETECTION—THE OLD WAY

In the past, people depended on their own senses to alert them to smoke and fire. This method was so slow that people who were asleep when a fire began smoldering never even got a chance to wake up.

Are you still using the old method?

DISPLAY CARDS (continued)

SMOKE DETECTION—THE NEW WAY

Smoke detectors like these can sense small amounts of smoke and wake people up in time to use the escape routes they have planned and practiced.

Smoke is the greatest danger in fire. Smoke and hot gases will make you sick and unconscious. As poisonous gases and lack of oxygen affect the nervous system, even simple tasks, such as opening locks on doors, become difficult. You must learn what to do BEFORE an emergency occurs so that you can act quickly.

A smoke detector will alert you to smoke in your home early enough for you to make an escape.

As you go, keep low. The best air is near the floor.

SMOKE DETECTORS: SECOND ACTIVITY -

SMOKE DETECTORS AS PRESENTS

FOCUS OF ACTIVITY:

Visitors are encouraged to give smoke detectors as gifts for birthdays, Christmas, and other special occasions.

SUGGESTED GROUPS/AGES:

Grades 5th to adult.

SUGGESTED GROUP SIZE:

10 to 30, depending upon ages of group members. Because young children have shorter attention spans, it is best to keep their groups small.

APPROXIMATE TIME REQUIRED:

Variable, depending upon group size and ages.

MATERIALS NEEDED:

Several types of smoke detectors, gift boxes, wrapping paper, gift cards, and accessory items (see Sample Gift Kits, following).

METHOD OF PRESENTATION:

This exhibit could be set up as a display by itself or used with the "Saferway Company" or "Fire in the News" exhibits. If time, space, and materials allow, participants can make personalized kits for friends or family members.

Explain the operation, installation, and benefits of smoke detectors (see Key Information). Allow the participants time for questions and answers, and the opportunity to examine several smoke detectors and sample gift kits. Participants may make gift tags to take with them, ready to put on the kit which they later will assemble on their own.

End the session with a review of the other essentials of a fire-safe home environment.

SAMPLE GIFT KITS

THE GOURMET KIT

2 candles
Recipe for Bananas Flambe
(or other gourmet recipe)
Flaming spoon
Brandy
Smoke detector

THE FIREPLACE KIT

Box of long fireplace matches
3 birch logs
Poker, brush
Smoke detector

THE KITCHEN KIT

(Especially good for children to make and give)

New pot holders
Hooks to hang potholders near stove
New broiler pan (or "coupon" good for one free kitchen cleaning)
Toast tongs (see Module #2)
Metal container for matches
Smoke detector

THE SMOKER'S KIT

A safe ashtray
Book of fancy matches
Favorite cigars, pipe tobacco, etc.

Smoke detector

E.D.I.T.H. KIT
Floor plans drawn of the house
Marker (to fill in routes)
Whistle for each bedroom
Smoke detector

EVALUATING THE EXHIBIT

How to Tell if Your Exhibit is Working

Do your exhibits do what you want them to do? Some exhibits may have more than one purpose, or have different purposes for different age groups. Some of the different purposes are:

- To introduce material and arouse interest. Example: a display of different types of smoke detectors.

- To clarify and reinforce information, including that which a visitor may have known only vaguely before. Example: a display showing how smoke detectors work, differences between products, and instructions for proper installation and maintenance.

- To teach a skill and provide an opportunity for people to practice it. Example: a chance for the visitor to try the smoke detector's testing device, vacuum its housing, change its batteries.

- To motivate the visitor to take further action. Example: the suggestion to visitors to buy a smoke detector on their way home.

When you evaluate your exhibit, keep in mind the different purpose or purposes of each module, and develop questions related to each purpose and to each intended audience. Spend some time observing the visitors to your exhibit. You may find that jotting down notes on their reactions will help you in answering the questions which you have formulated. Questions such as the following may be helpful in evaluating your exhibit:

- For introducing material and arousing interest—

  Q. Are people initially attracted to the exhibit?

  - Count the number of people who approach the exhibit. How many pass by without looking? How many stop to look? About how long do they spend there?

  - Note the ages of those who stop, the time of day, the weather, how crowded it is (these factors have been shown to affect people's ability to concentrate on exhibits).

- For clarifying and reinforcing information—

  Q. Do visitors read the printed materials and study the objects?

  - How long does it take different visitors to read the signs? Do they follow the signs in the intended sequence?

Q. Do people understand what they read?

- This can be a hard question for you to answer. You could ask visitors if your messages were clear to them (but they may be too polite to say "no"!).

- You can ask people questions before and after they view the exhibit. This can tell you how many had no prior knowledge of the exhibit's content, and how many have learned something from seeing it. (If they know they are going to be "tested" after seeing the exhibit, however, people will tend to pay more attention to it than they otherwise might.)

- For teaching a skill—

  Q. Do the visitors try the activity?

  - Do they read the instructions first? Try to follow them? Perform the task or tasks correctly? Know when the task has been done right? Try again if the first attempt fails?

- For motivating further action—

  Q. Does the visitor "do" anything about what he or she has learned?

  - It is very difficult to assess "further action" in a situation such as this. A person who eagerly draws home exit plans while attending the exhibit, for example, may or may not ever actually practice them at home. A mail-back postcard, listing specific actions to be checked off if they have been performed within a stated time period, may be given to the visitors at the end of the exhibit. Information obtained in this way is not 100% reliable, of course. And many people just won't bother to mail the cards back to you.

  - If visitors, especially organized groups, can be scheduled for a return visit, talking with them may be the best way to find out what has been learned and remembered, and what may have been applied in "real life." These follow-up talks also may expose any weaknesses and areas of confusion in your exhibit.

The best measurement of the success of your exhibit well may be the evidence of your own eyes and ears. Do people seem to be enjoying it? Do they ask questions, discuss with each other what they are seeing, make favorable comments? Are they eager to see all of the exhibit? Or are they bored, in a

hurry, hardly glancing at the exhibit; do they leave before they have seen everything? People's behavior often can tell you more than their words!

Redesign Considerations

If your exhibit, or parts of it, are not as successful as you would like, try to figure out where the problem is by asking yourself questions such as the following:

- If the exhibit does not arouse interest—
  - Is it unobstructed? Are its various parts perceived as making up a whole?
  - Does time of day affect response? Are people hurrying too much?
  - Are staff personnel available to answer questions? Are they too available, to the point of intimidating the visitor?
  - Would any of these help: change of colors, lighting; repositioning of materials; change of location; less noise?
- If visitors do not try the activities—
  - Is it absolutely clear what the visitor is supposed to do?
  - If instructions must be read, are they legible and located so as to be easily visible? Are they clear and concise, and written in language appropriate to the age level which you are trying to attract?
  - Is there enough space for the visitor to perform the activity in comfort?
- If visitors repeatedly fail at a skill—
  - Does the visitor really have a way of knowing when the skill has been performed correctly? If it isn't obvious, is the staff available to assist?
  - Is the standard of performance too high for the persons or group in question?
  - Are too many tasks expected in too short a time? Can the tasks be simplified and/or reduced in number and still produce the desired results?

Evaluation of Supervised Exhibits

Most of the exhibits discussed in this manual are designed primarily to be used under supervision. It is intended that a staff person be present to help visitors explore the exhibit or to supplement the display with other activities.

While one staff person works with a group of visitors, a second staff person may wish to observe in order to evaluate the success of the exhibit. Make notes on what you observe: people's gestures, where their eyes are focused, what they say, the questions that are asked, any misunderstandings, and the like. Additional things to look for might include:

- Are any of the participants wandering off? Looking bored? Trying to get attention?
- How well are those who are supposed to be working together getting along and doing their job?
- What was the mood of the group prior to the staff presentation? During? After?
- Is the staff presentation dramatic and enthusiastic? Which visitors respond best to that? Or is it quiet and straightforward? Who responds to that?

From your notes you can then construct a brief narrative description of the visitors' reactions to the exhibit and their interaction with the supervisory staff person.

Be sure also to include pertinent information about the group which you are observing. A short pre-printed check list like the one shown below could be used, and attached to the narrative.

Use your observations to pinpoint any problems or shortcomings in your exhibit. If changes are made, re-evaluate the exhibit afterwards to see if the changes really have helped.

GROUP INFORMATION

Exhibit: _____ Exhibit Supervisor: _____

Observer: _____

Date: _____ Time: _____ Weather: _____

Size of Group: _____

Type of Group:

School _____; Grade(s) _____

Adult _____

Club or organized group _____; (Specify) _____

General Public _____

Age of Group (if group is mixed, put approximate number or percent in the applicable categories):

Under 6 _____

6 - 12 _____

13 - 19 _____

20 - 60 _____

Over 60 _____

Group aware of observation?

Yes _____ No _____ Maybe _____

best copy available

CONCLUSION

The family fire safety exhibit whose nine modules are discussed in this manual was designed by the Children's Museum of Boston, Mass. The details given for each module should enable you to copy the Museum's design, or inspire you to adapt their ideas to your own needs and talents.

One of the outstanding features of this exhibit is that the modules either may stand alone or may be used together in an overall display. The independent nature of the modules makes it possible for you to build as many (or as few) as time, money, space, and interest allow. The total exhibit can be built over a period of time, again depending on local needs and resources, while providing one or two modules "right now" to whet public interest (and, possibly, to facilitate fund raising for the rest of the project).

Another key feature of the exhibit is that all of the modules can be designed to be portable. Thus your exhibit is more than a static display: it is a traveling road show which you can use in your educational outreach activities.

Two things to keep in mind once your exhibit is finished and on display:

1) Evaluate — don't just build it and forget it. Don't assume that people find it interesting and intelligible. An ineffectual, confusing exhibit may be worse than no exhibit at all.

2) Publicize — if you've got something good, let the public know about it. Tell them what it is, when and where they can see it, and why it will be of interest to them.

Family fire safety is one of the most important educational lessons that you teach. Exhibits such as these can help make it easier and more fun for the public to learn.

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